DEFINING THE FRONTLINE WORKFORCE

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HEALTH WORKFORCE SOLUTIONS

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EXECUTIVE SUMMARY

The Robert Wood Johnson Foundation Human Capital Portfolio Team (RWJF) has executed a study focused on enhancing understanding of the frontline healthcare and human services workforce and identifying priorities for initial strategic investment.

The frontline workforce is a vital, but little understood component of the overall healthcare community. In general, we know that this critical part of the healthcare delivery system is the most at risk component of health employment and encompasses occupations with the least amount of visibility. However, as the population ages and questions of equity in the workplace and the creation of opportunity emerge, the frontline workforce will become more visible and vital. From this perspective, several core questions drove this undertaking. What are the overall characteristics, qualities and potentials of the frontline workforce? Where and how might a set of programming values and directions from RWJF best attach themselves to this workforce? What immediate avenues should be explored for action?

RWJF approached this study with the standpoint that frontline workers generally have been understudied and are facing key challenges that may obstruct their ability to work effectively, contribute at their maximum potential and enhance their own work experience and career advancement opportunities. As part of an overall work plan to further explore these initial observations and advance research efforts in this area, RWJF worked in conjunction with Health Workforce Solutions, LLC (HWS) to conduct an investigation of the frontline healthcare workforce, and to create a set of operational definitions that will help shape future programming by both RWJF staff and external partners.

Defining the scope of occupations within the frontline workforce was a key initial component of the research effort. The project team worked with the RWJF Human Capital Team to develop a set of decision criteria, which led to a working universe of frontline workforce occupations. Preliminary delimiting criteria from all occupations resulted in a group of healthcare occupations consisting of 12.3M people delivering varied

levels of patient care and healthcare services. These occupations exclude management and executive roles and focused on roles ranging from physicians, to laboratory technicians, to medical transportation drivers. Further decision criteria delimited this universe in order to focus on the specific subset of the frontline workforce with education levels that were generally at the Bachelor level or below, with median annual wages below $40,000, and with a high level of direct care and service. This subset of occupations consists of 4.7M people, and is referred to in this report as the frontline workforce.[1] These resulting operational definitions provide the foundation for the findings in this report and are presented in this report in a dual format of profile table and brief narrative. Every effort was made to collect and synthesize consistent data across all frontline groups.

The 4.7M frontline workforce jobs profiled in this study represent one-third of the 12.9M jobs that make up the U.S. health services industry (North American Industry Classification System 2002).[2] The demand for the frontline workforce jobs profiled in this study will increase by 50% by the year 2012 in which there will be a need for 7.1M frontline workforce jobs.

According to the Bureau of Labor Statistics, these occupations are growing faster than average, and yet the frontline workforce as a whole is experiencing widespread shortages and high turnover rates that are highly problematic obstacles to meeting this future demand. An aging general population will lead to an increased demand for care delivery in institutional as well as home health settings, and yet this area of the frontline workforce (e.g. home health aides, nursing aides) experience some of the highest vacancy and turnover rates of all healthcare occupations. As medical technology continues to advance, an increasing number of laboratory tests will need to be performed and

[1] This number represents the subset of the frontline workforce profiled in this report, acknowledging that other roles may fit under the overall working definition of frontline workforce occupations. A listing of included and excluded occupations in this report can be found in Appendix B.

[2] The criteria for defining the frontline workforce for this study began from all industry occupations (not strictly from the defined health services industry occupations) and therefore some frontline workforce roles are outside the scope of the census-defined health services industry.

analyzed, and yet a large amount of turnover in the lab technician profession is due to retirement and the current state of lab technician training opportunities are not able to adequately supply for this future demand. The median wage across this frontline workforce is significantly lower than other healthcare occupations, and the majority of workers in these occupations have little to no job advancement opportunities once they have entered into the workforce.

The frontline workforce occupations represent a diverse set of skills, training, and workplace settings, however collectively they represent a workforce with occupations that are all experiencing increases in demand, and also facing challenges to building a sustainable worker population. This growing workforce is experiencing high turnover rates, lower wages and access to benefits, and limited training and job advancement opportunities. These challenges vary somewhat across occupations, and the occupational narratives provide more nuanced analysis of the scope of challenges affecting particular occupations. As a whole however, this frontline workforce represents a population that is the foundation for a quality healthcare delivery system and further initiatives are needed to ensure the sustainability of the workforce.

INTRODUCTION

The Robert Wood Johnson Foundation (RWJF) is dedicated to improving the health and healthcare of all Americans. Its philanthropic and research portfolio includes initiatives aimed at improving the situations of not only the recipients of direct care and services but also the workforce that delivers them. Historically, the Foundation's focus on workforce has been primarily targeted at the upper echelons of the professional ranks; physicians, registered nurses and healthcare executives. These professionals are critical, highly visible components of the U.S. healthcare system that provide vital contributions to the public, their patients, key constituents and the organizations they represent. However, there is a significant number of the healthcare workforce (the frontline workforce) that provides vital healthcare delivery, and yet is often underrepresented within the current research initiatives within the healthcare system. This is a somewhat amorphous group of professionals and paraprofessionals that provide a range of direct patient care and client services, and RWJF has focused on both providing working definitions for frontline workforce occupations, and researching the obstacles and challenges facing these professions.

Over the past 18 months, the Human Capital Portfolio Team at RWJF has been strategizing how best to stimulate interest and action around enhancing the viability of the frontline workforce. Building off preliminary observations that there were millions of U.S. healthcare workers in roles facing real challenges around recruitment and retention issues, the Foundation is committed to a focus on adequate skill development and job training as an essential component of high quality of care. Stability, adequate preparation and orientation, fair compensation, job satisfaction and career development are understood as critical dimensions that factor into whether frontline workers would be successful in their roles. A working group within the Human Capital Portfolio Team has explored this through meetings, site visits and follow-up conversations with researchers engaged in studying frontline workforce issues and developing programmatic change initiatives. From these efforts, RWJF has continued with further research and exploration toward a goal of better understanding the frontline workforce and determining where to focus strategic investment.

The frontline workforce is experiencing shortage issues across occupations, a problem that is expected to become even more acute over the next decade, as evidenced by the Bureau of Labor Statistics projected increase in job openings for these roles through 2012. A significant portion of this projected demand is due to vacancies from workers leaving frontline workforce professions, which will be discussed in more depth below. For some occupations, such as social workers and clinical lab technicians, this is fueled largely by retirement while other occupations, such as long-term care roles and emergency medical technicians, experience a high level of turnover and workers leaving the profession altogether. Preliminary analysis reveals that the workforce is lacking a viable, skilled emerging working population to adequately fill this demand and strategic initiatives may be most effective by targeting both outreach and training opportunities along with career advancement pathways in order to advance entry into frontline workforce occupations and to strengthen existing occupation frameworks.

PROBLEM STATEMENT

There seems little doubt that the frontline workforce will continue to play a major role in how care and services are delivered and its overall cost and quality. Often left out of the explicit equation when planning and implementing programs to improve health and health care, these workers are in positions to control the ways in which service is organized, the manner in which it is delivered and the experience of the consumer. But as the health and health care system experience new challenges and structures its response, it has very little base line information about this critical workforce. Basic descriptive statistics across the occupations and professions are just now being assembled and nothing like the sophisticated analysis for physicians and nurses exists today. Other than some early work focused on the long-term care direct care workers, we know very little about entry, motivation, continued training or exit from the field for the frontline worker. Compiling detailed information is complicated by the lack of licensure, accrediting and other professional association entities following these workers and by their traditional low visibility. Unions, especially the Service Employees International Union (SEIU) and the American Federation of State, County and Municipal Employees (AFSCME) have begun to take a strong interest in recruiting frontline healthcare workers to their roles but they are notoriously reticent to provide any data on their membership. Additional data and studies will be critical for better insight into these employees as interested parties continue to develop policies and programs to both attract these workers and achieve higher value from their investment in their employment.

Many of the same trends that will impact all of health care and the rest of the health workforce will make an impact on the frontline worker. Other more "secular" trends will have a deeper impact on this part of the workforce. Perhaps the greatest change over the next twenty years will be the nation's demographic shifts. As the population ages and the baby boomers flood into retirement-stage age cohorts, more and more care will be delivered in institutionalized settings including the hospital and long-term care facility. Both of these settings currently employ large numbers of frontline workers and this total will need to grow significantly with the aging population. This is further demonstrated in

the 2012 Bureau of Labor Statistics projections for these occupational groups. This workforce will also continue to be ethnically more diverse than the rest of the health professional population and will create a shift in how the concept of cultural competence is defined. Today, the emphasis is on a predominantly Caucasian professional class delivering care to an increasingly diverse patient population. In twenty years, this situation will be reversed with an aging Caucasian population being cared for by a highly diverse group of frontline workers. The trend to have much of this institutional care provided by recent immigrants will likely continue as there seems even less likelihood that pay will dramatically increase for these workers, thereby creating a vacuum that will force employers to attract others to consider employment.

These two trends of aging and diversity will be combined with the continued rise in new care technologies and consumer desire to avoid institutionalization to move much of the care now given through institutions to ambulatory settings in the home and community. This shift will make a big impact on where and in what capacity the frontline worker is employed. The technological changes that are most important for the frontline worker will be those that merge the information and communication technologies that are available with new biomedical technologies that are currently coming on line. These will increasingly morph into care management technologies, which will allow for more rapid and deeper movement into ambulatory settings and also place new skill demands on the frontline worker. Even though today relatively low-skilled workers carry out much of this work, there will be cost and consumer preference pressure to make more extensive use of technology. This will create new demands and opportunities for frontline workers. Health care in general will continue to be one of the fastest growing parts of the economy and this momentum will foster both an up and downside impact. Many of the opportunities that will emerge in the total U.S. workforce will be in the healthcare sector.

METHODOLOGY

The information presented in this study is a product of the collection and synthesis of secondary data sources. The primary objective was to identify and mine existing, publicly available data sources and then develop a universe of frontline workforce occupations and operational definitions for the occupations chosen.

The majority of the data sources were acquired via the Internet using a variety of search protocols described in more detail below. Data sources included journal and news articles, published data and reports from various federal, state and local agencies, academic and think tank studies, and a variety of career development and educational program resources. In general, research focused on US-based sources that were five to seven years old. Every effort was made to gather a consistent depth and breadth of data across all of the occupational areas under study. There were limitations as to what could be identified and retrieved based on the visibility, level and scope of data available for each occupational group. Generally, occupations that are licensed or registered have more comprehensive demographic data available than those that are not. Some professions provide occupation data, but tend to focus their attention on a narrow band of issues such as raising levels or required educational preparation and credentialing (health educators, social workers, occupational health and safety specialists) or activity specific technical aspects (clinical laboratory technicians, medical records and health information technicians).

For Phase 1, the research focus was on identifying a nomenclature on which to base the development of a working universe of health and human services occupations. The goal was to find or create something comprehensive, flexible and manageable. Therefore, research protocols were targeted at both state and federal agencies that focus on workforce data as well as key settings in healthcare and human services that provide relevant occupational data. Industry segments that were reviewed included acute care, long-term care, public health, community health, ambulatory, behavioral health and school and prison based healthcare.

In addition to using secondary data to develop a working universe, Phase 1 also included data gathering on basic demographic information at the occupational level and sourcing more granular lists of job titles. Key baseline data elements included employed population, wages, job outlook, education level, licensure status and primary settings of care delivery. This research allowed for basic comparisons to be made across the groups. These comparisons allowed for varying initial analyses in order to refine the universe to a relevant set of frontline occupations to study in detail.

In conjunction with the preliminary demographic data analysis, the project team and RWJF developed a rationale and methodology to determine the set of frontline workforce occupations for further study. A set of consensus value statements were extracted that included dimensions such as level of education and socioeconomic status of a worker and their ability to work independently and self-direct their careers. These value statements were evolved to preliminary decision criteria and then the demographic data was used to translate the criteria into actionable sort parameters. An example of the decision criteria is as follows:

Value Statement: "Focus will be those workers with lower levels of education and socioeconomic status."

Decision Criteria/Sort Parameter: Exclude occupational groups with education levels higher than bachelor's degree and median annual wage levels higher than $40,000.

The sort parameters were applied to the full working universe of occupational groups and test cuts were made as starting points for a discussion on which groups might advance or be excluded after Phase 1. A second group session with the RWJF Human Capital Team and the project team took place where the working universe and draft decision criteria was presented and the initial test sorts were reviewed. During this session, the group refined several of these decision criteria and then the total set was confirmed. A final list

of advancing groups was established and the project moved into Phase 2. A complete listing of included and excluded occupations can be found in Appendix B.

The basic research parameters for Phase 2 were similar to the previous phase. Secondary, web-based research was conducted, this time on an occupational group specific basis. This in-depth research was divided into two sections. The first was targeted at identifying deeper, more comprehensive demographic data for each group and the second was focused on more definitional and qualitative dimensions. This second focus was geared toward acquiring available data on aspects of occupations such as entrance into the field, advancement opportunities, and other challenges to the profession. Resources included all of those used in Phase 1 and a range of occupational group and setting specific materials from professional associations, accrediting organizations and standards agencies. As with Phase 1, it was not always possible to get the same set of demographic and definitional data across all the occupational groups. All retrieved data sources were reviewed and pertinent data points were extracted based on relevance to the study questions. A complete bibliography appears in Appendix C. Occupational group specific operational definitions were developed as both individual narrative and profile tables and each set of final output was reviewed for potential connections, similarities and disparities within and across some key categories.

RESULTS: PHASE 1

The objectives for Phase 1 of this study were twofold: 1) Identify and construct a working universe of core frontline healthcare and human services occupations and 2) develop and implement a rationale for delimiting the universe to a more focused and manageable subset for further study. The RWJF Human Capital Portfolio Team's starting point for this project was based on a commitment to the frontline workforce but neither an internal or external lexicon existed for talking about this group of occupations. Team members had various initial perspectives and opinions about what occupations constitute the frontline healthcare workforce, however more detailed information was needed to develop an effective classification of occupations.

A clear starting place then, was the development of a working universe on which to begin initial study. This allowed the "outline of the elephant" to take shape and provided a foundation for the discussion of which frontline occupational groups should be studied further. After conducting the initial research, as described in the methodology section of this report, the HWS team proposed the Bureau of Labor Statistics classification system as the backbone. This proved to be far preferable to trying to aggregate a variety of workforce listings from different delivery settings such as acute care, long-term care and public health to create one universe. The Bureau of Labor Statistics 2000 Standard Occupational Classification (SOC) offered some important advantages, as it was comprehensive, the choice of the Federal government as its standard, and it had a flexible structure that scaled from broad categories to detailed occupations. It also linked to key resources like the BLS Occupational Employment Statistics data set and the Occupational Handbook and had a pre-built crosswalk to the U.S. Census 2000 databank where a wealth of job title detail (over 31,000 titles) was available to flesh out the BLS classification data.

After reviewing the full SOC, key healthcare and human services occupations were extracted. Certain related groups with connections to these broad occupational areas

were deliberately excluded as they involved little or no direct patient/client contact. These included occupations in major categories such as:

- Management
- Education
- Science
- Sales, retail
- Manufacturing

The remaining occupational groups were reviewed, and further delineated using the U.S. Census 2000 job title database. They were then cross-referenced using a variety of sources including the civil service occupation listings from the Federal Government and several states (California, Texas, New York and New Jersey). The project team also drew on existing workforce enumerations in the public health and community health sectors. The resulting working universe was comprised of 78 occupational groups and over 840 U.S. Census job titles. Of the 23 total SOC major groups categories, eight were chosen as the focus of study. This list included a full range of direct care providers from physicians and surgeons to pharmacy aides. Two versions of the full occupational group list are included Appendix B. The first is the core list and displays the major category and group each occupation falls under. The second provides the U.S. Census 2000 job title detail for each group.

Basic demographic data points were then collected for all 78 groups. The data was sourced solely from BLS in an attempt to keep the comparisons as consistent as possible. The primary sources were the November 2003 release of the Bureau of Labor Statistics Occupational Employment Statistics and the Bureau of Labor Statistics 2004-2005 Occupational Handbook. The six specific elements collected included:

- Population/employment
- Annual median wage
- Licensure requirement (Yes/No)
- Significant education level
- Job outlook (projected growth)

- Level of independent practice

The 78 occupations were appended with basic descriptions and these six data points and then sorted based on five of the six variables so that sub-groups could be created as needed. All of these test sorts are available in Appendix B.

One of the other key outcomes from this first phase was a set of consensus decision criteria that reflected the RWJF Human Capital Portfolio Team's value statements. These statements were translated into preliminary criteria that were applied to the test sorts described above. The final decision criteria agreed to and applied during the meeting were as follows:

1. Excluded occupational groups due to low level of direct care or service
2. Excluded occupational groups with significant education levels of bachelor's degree or above
    a. Note: retained some groups for further study where the education levels were widely varying
3. Excluded occupational groups with median annual wage (as of November 2003) above $40,0000
4. Excluded occupational groups with employed populations (as of November 2003) of less than 30,000. Note that these populations did not include the self-employed or volunteer components within a given occupational group.
5. No exclusions were made based on licensure status or job growth outlook as the team felt the data lacked appropriate depth for effective interpretation. This depth would be added during Phase 2.

The delimiting process resulted in a final group of occupational groups for further study. The full list of advancing and excluded groups is in Appendix B. The groups moving to Phase 2 included:

- Medical Assistant
- Emergency Medical Technician & Paramedic
- Pharmacy Aide

- Physical Therapist Aide
- Home Health Aide
- Personal and Home Care Aide
- Nursing Aide, Orderly & Attendant
- Health Educator
- Occupational Health & Safety Specialist & Technician
- Social Worker – Medical & Public Health
- Social and Human Service Assistant
- Community and Social Service Specialist
- Social Worker - Child, Family, School
- Counselors - Mental Health
- Counselors - Substance Abuse & Behavioral Disorder
- Social Worker – Mental Health & Substance Abuse
- Psychiatric Aide
- Psychiatric Technician
- Clinical Lab Technician
- Medical Records and Health Information Technician
- Medical Transcriptionist

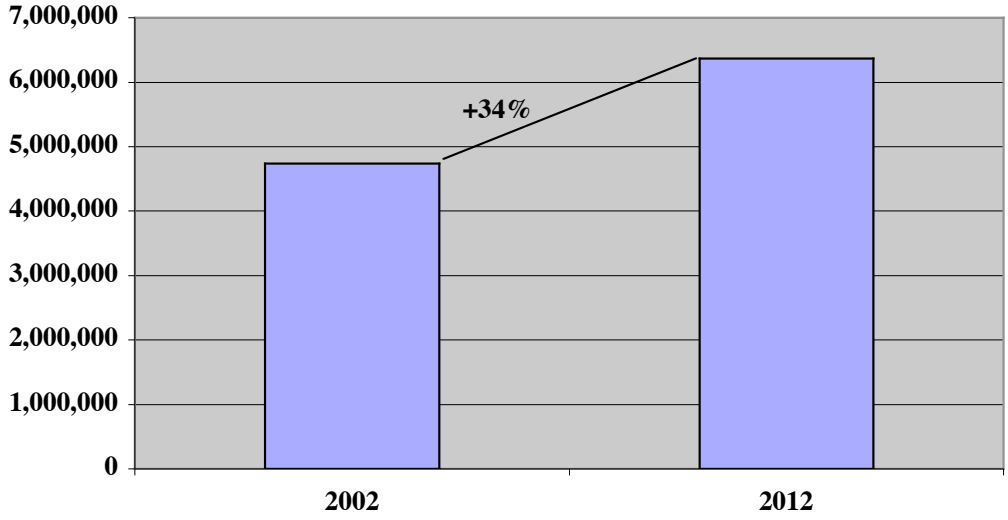
RESULTS: PHASE 2

The core objective for Phase 2 of this study was to create operational definitions for each of the frontline occupational groups selected to advance at the conclusion of Phase 1. These definitions would augment the basic demographic data points previously gathered, using the processes outlined in the methodology section of this report. This involved relying on secondary research tactics to identify, extract and synthesize information on the chosen occupations and then create the definitions.

The final output combines a short narrative with profile tables constructed for each occupation. In some cases, the narrative portions for some roles have been combined given the availability of information on a particular occupation and/or reflecting a significant overlap between the roles that emerged during the research activities. The profile tables and occupational group narratives are presented in this Phase 2 results section. An explanation of terms and statistics are located in Appendix A.

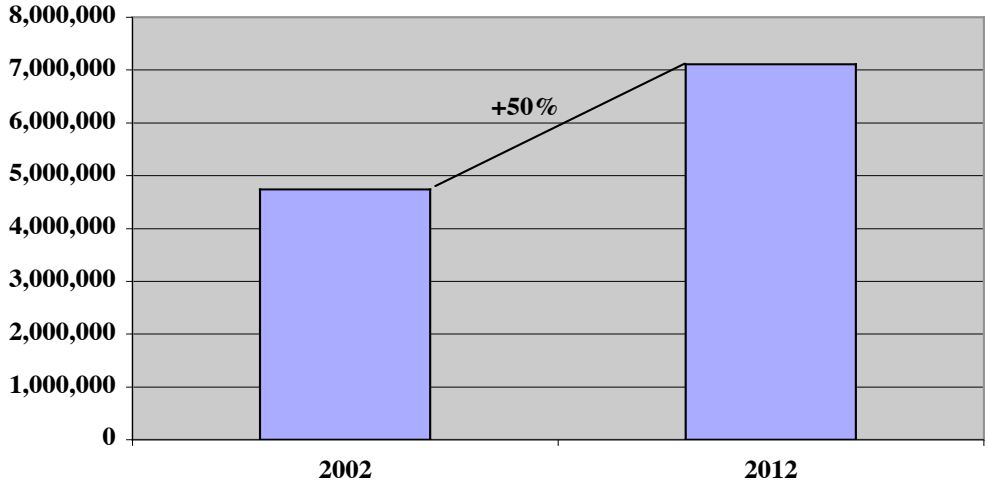
In total, the studied group of frontline workforce represented over 4.7M employed workers in 2002 based on data reported by the Bureau of Labor Statistics (Figure 1). Not all occupations document comprehensive demographic information, however existing data indicates that 80% of the studied frontline workforce is female and 32% are African-American or Hispanic. BLS projects future job openings based on "growth," which is a reflection of population and general occupation growth, and also based on "separations," which is a reflection of the estimated number of workers leaving the occupation due to retirement, choosing other professions, or leaving the workforce altogether.

Figure 1: Projected job openings due to growth



The Bureau of Labor Statistics projects an increase in employment for these roles due to growth to almost 6.4M or just over 34% by 2012, as is illustrated in Figure 1. This is a significant rate of change that gets even larger if you add in the need due to permanent separations as shown below in Figure 2.

Figure 2: Projected job openings due to growth + separations



Factoring in openings from workers retiring, leaving the profession or leaving the workforce drives up the total new openings anticipated in 2012 to 7.1M, a 50% increase from 2002. For some roles, the permanent separation need ends up being a significant

figure and can be an indicator of either a high average age of workers or a high rate of turnover as workers flee to other types of work. For example, the percent change between 2002 and 2012 increases from 25% to 38% for nursing aides when the estimated additional 180,000 of openings due to permanent separations are included in its total job openings. In this instance, these separations are probably due more to high turnover and workers leaving this occupational group for another, as they make lateral or advancement changes in employment.

Regional variation of per capita employment (per 100,000) for this frontline workforce sample was calculated using the 2003 employed population for each group from the BLS Occupational Employment Statistics data set and 2003 total population by state from the U.S. Census. The data was aggregated into ten geographic regions based on definitions used by U.S. Department of Health and Human Services. The frontline professions with the highest and lowest per capita employment are summarized in Figure 3 and the total complement of regional variation data is presented in Figure 4.

Figure 3: Highest and Lowest per Capita Employment

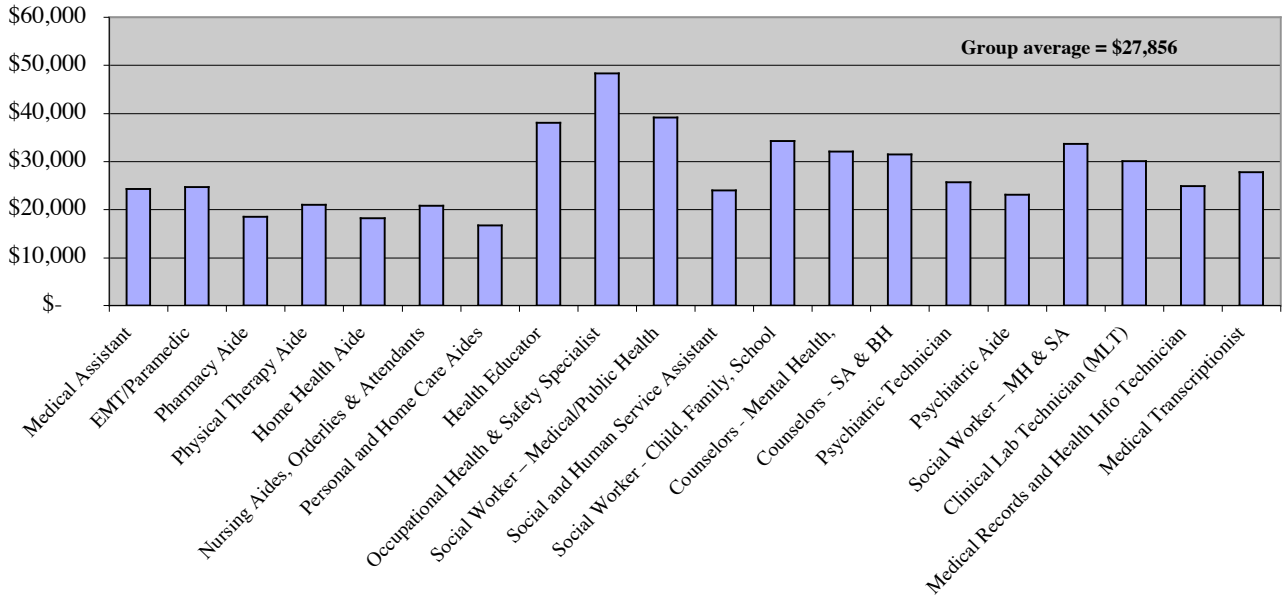
Top 5
Nursing Aides, Orderlies & Attendants
Home Health Aide
Personal and Home Care Aide
Social and Human Service Assistant
Medical Assistant
Bottom 5
Physical Therapist Aide
Health Educator
Occupational Health & Safety Specialist & Technician
Psychiatric Aide
Pharmacy Aide

Figure 4: FLWF 2003 per Capita (100,000) Employment by DHHS Region

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
Medical Assistant	93	115	120	126	119	162	110	108	153	126
Emergency Medical Technician & Paramedic	78	55	71	72	78	59	81	71	36	45
Pharmacy Aide	24	20	18	18	30	19	22	15	21	17
Physical Therapist Aide	12	15	14	10	11	15	14	18	15	11
Home Health Aide	225	450	170	154	210	200	192	122	108	193
Personal and Home Care Aide	156	267	141	98	153	389	202	159	98	139
Nursing Aides, Orderlies & Attendants	649	490	485	475	520	450	712	457	298	352
Health Educator	19	18	16	16	13	13	14	18	15	25
Occupational Health & Safety Specialist & Technician	18	16	18	13	14	18	20	19	10	24
Social Worker – Medical & Public Health	59	37	42	34	38	29	46	34	25	33
Social and Human Service Assistant	221	159	138	86	106	99	143	122	78	107
Social Worker - Child, Family, School	138	105	101	71	94	58	89	94	73	60
Counselors - Mental Health	60	22	52	22	22	15	23	38	34	47
Counselors - Substance Abuse & Behavioral Disorder	27	38	29	14	18	16	24	30	22	32
Social Worker – Mental Health & Substance Abuse	64	36	52	30	35	19	41	31	26	69
Psychiatric Aide	17	23	24	17	9	16	33	15	5	12
Psychiatric Technician	11	8	22	18	26	12	53	21	12	22
Clinical Lab Technician	60	48	62	53	46	47	62	51	36	41
Medical Records and Health Information Technician	63	37	49	58	57	47	75	63	42	61
Medical Transcriptionist	31	24	38	33	43	25	51	39	23	38

The frontline worker study population had an average annual wage of ~$28,000 (Figure 5) with a weighted average median annual wage based on 2002 employment of $23,422.

Figure 5: Studied FLWF Groups - 2003 Median Annual Wage



After completing the research and synthesis on the selected groups, the HWS team placed them into five categories driven by commonalities in key characteristics, challenges and in the type of activities and contributions they make to the healthcare and human services sectors. The five categories and the groups that fall into them are:

1. Clinical Support – these roles are direct caregivers in clinical settings that typically operate under the direction of a physician, registered nurse or some other licensed caregiver (pharmacist, therapist, etc). They often have high rates of part time workers and tend to be lower paid, have lowest levels of required training and/or education and are not usually licensed or registered (exceptions would be some types of home health aides and paramedics). In most cases, these are fast growing occupations with high projected need over the next five to seven years. Many share common themes of high turnover fueled by low wages, low or no benefits, low recognition and minimal supervision and training support.

- Medical Assistant

- Emergency Medical Technician & Paramedic
- Pharmacy Aide
- Physical Therapist Aide
- Home Health Aide
- Personal and Home Care Aide
- Nursing Aide, Orderly & Attendant

2. Public Health Delivery – these roles operate heavily within the public health infrastructure although they can be found in other settings. The predominant entry educational levels tend to be higher than those for the clinical support roles and there are more forms of certification available. They tend to be smaller employment groups and share common challenges including chronic shortages, budget pressures tied to Federal, State and local government agency funding, the need for targeted areas of training and inadequate coverage in rural areas.

- Health Educator
- Occupational Health & Safety Specialist & Technician
- Social Worker – Medical & Public Health

3. Community Health Delivery – these roles operate across different segments of the community health system. Some of the roles demonstrate similar characteristics and challenges to those found in the Clinical Support category including high rates of part time workers, lower pay, low levels of required training and/or education and they are not usually licensed or registered. They also face challenges of poor visibility and a lack of awareness and understanding about their function and contributions. Social workers would be the exception.

- Social and Human Service Assistant
- Community and Social Service Specialist
- Social Worker - Child, Family, School

4. Behavioral Health Delivery – these roles are all concentrated in the behavioral health sector which includes mental health, substance abuse and addiction care. There is a wide

range of education levels, scope of practice, wages and autonomy across these roles but they are all bound by common observations and key issues related to the behavioral health delivery system. Key common themes include repercussions from deinstitutionalization, stigma associated with mental health/substance abuse, high burnout and rates of turnover and a call for change in both academic preparation and professional development to keep pace with innovation around treatment of dual diagnosis, evidence based practice and cultural competency.

- Counselor - Mental Health
- Counselor - Substance Abuse & Behavioral Disorder
- Social Worker – Mental Health & Substance Abuse
- Psychiatric Aide
- Psychiatric Technician

5. Healthcare System Support – these roles are distinguished from those in the previous categories by having workers with little to no direct contact with patients or clients. Their functions, while critical to the overall care delivery process, are more system support oriented. They typically have standardized education requirements due to the technical nature of their roles and formal certifications available from professional associations that also advocate for their bet interests. They also share themes focused on shortages, high regulatory demands and rapidly changing work environments.

- Clinical Lab Technician
- Medical Records and Health Information Technician
- Medical Transcriptionist

What follows are profile tables for each of the frontline workforce occupations studied, beginning with a generic table explaining each of the data points represented in the tables.

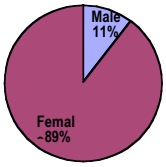
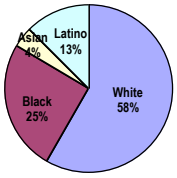
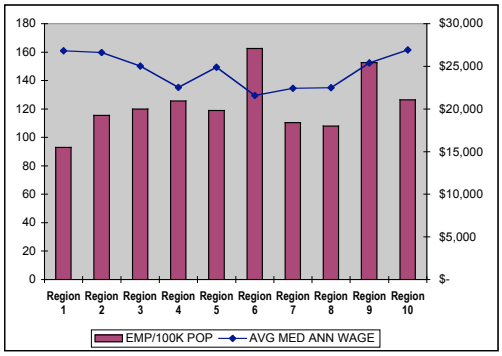
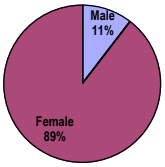
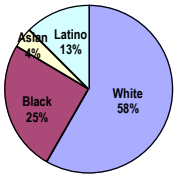
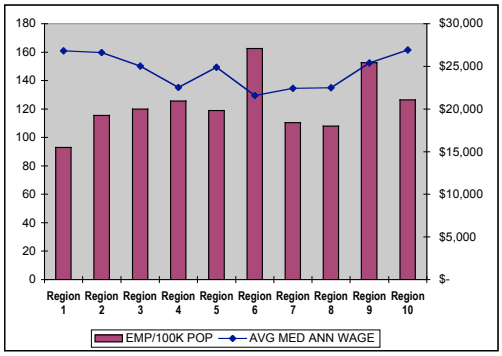
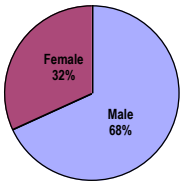
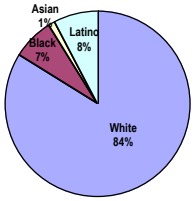
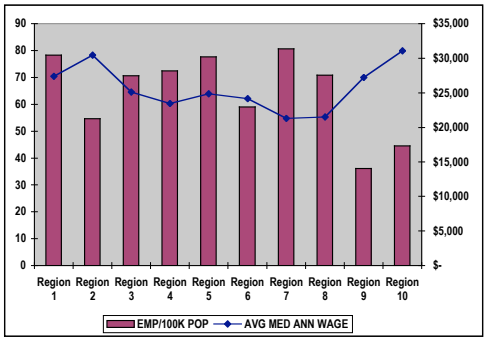
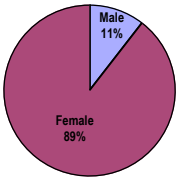
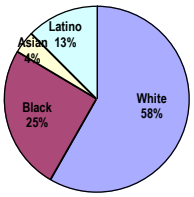
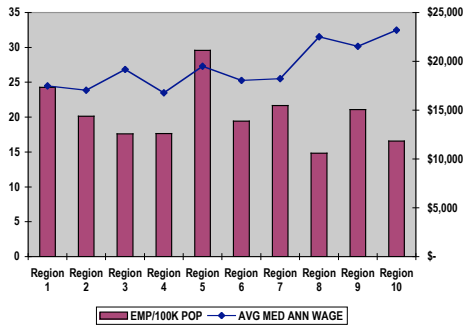
TABLE X:	Occupational Profile
Estimated Number	– BLS data on number of workers employed in the occupation in 2002. – Calculated projected total job openings in 2012 from BLS job projections due to growth plus calculated openings due to separations (job openings from workers leaving the profession) – BLS Employment Growth Rating: Slower than Average, Average, or Faster than Average
Demographics	  – Average age (if data available) – Vacancy/turnover rates (if data available
Education/ Training	– BLS Occupational Handbook data on job training and certification and licensure requirements if any. – BLS Occupational Handbook data gathered on highest level of education based on employees age 25-44
Average Salary	-- BLS Salary and Wage data for median annual salary in 2003
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	-- BLS Occupational Handbook data gathered, when available, on distribution of employees across workplace settings.
Key Challenges	– Key workforce challenges identified primarily through BLS Occupational Handbook.
Comments	-- Any other relevant data points specific to the occupation.

TABLE 1:	Medical Assistant
Estimated Number	– 365,000 employed in 2002 – Projected total job openings in 2012 = 647,000 (77% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age: N/A – Turnover estimated at 20-30% annually
Education/ Training	– Not required; mainly on the job training after high school diploma – Growing number of vocational and associate degree programs – Not licensed; voluntary national certifications available – Highest level of attained education: employees age 25-44 • 36.6% High school or less • 49.8% Some college • 13.5% Bachelor or more
Average Salary	– Median annual salary $24,300 in 2003 – Seeing minimal short term gains (1.5% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 60% Physician offices – 14% Public and private hospitals – 10% Offices of other healthcare providers – 16% Other settings including outpatient and ambulatory centers
Key Challenges	– Historical shortages – High turnover due to limited advancement and low wages – Training very specific to a practice/clinic; limits ability to transfer – Certification does not have large impact on wages (+5-10%) – Must adapt to increasingly complex work environments
Comments	– Fastest growing role per BLS projections for 2012 – High level of part time worker

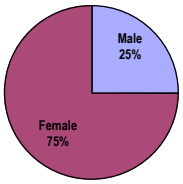
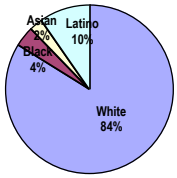
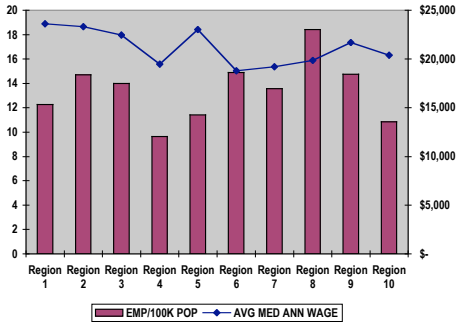
The Youth Policy Institute in Los Angeles received an $800,000 grant from the CA Employment Development Department. They will train 105 low-income participants as medical assistants in hospitals, doctor offices, pharmacies, and clinics. Participants will come from Pico Union and East San Fernando Valley, two of the poorest communities in Los Angeles and California. Participants will receive on-the-job training in medical records, insurance billing and coding and medical terminology at partnering hospitals. Youth Policy Institute has a successful track record in training 130 participants in Medical Office Careers over the past three years.

TABLE 2:	Emergency Medical Technicians & Paramedics
Estimated Number	– 179,000 employed in 2002 – Projected total job openings in 2012 = 259,000 (45% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age; estimates range from mid 30's to 40's – Vacancy/turnover: N/A
Education/ Training	– Formal training required; progressive across 4 levels – Paramedics usually have associate degree – All states require some form of certification; most require National Registry of EMT's registration – Highest level of attained education: employees age 25-44 • 14.8% High school or less • 35.5% Some college • 49.7% Bachelor or more
Average Salary	– Median annual salary $24,760 in 2003 – Seeing moderate gains (3% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 40% Private agencies – 30% Local government (fire, police, public ambulance/EMS – 20% Hospitals
Key Challenges	– Physical challenges (hearing loss, lifting, exposure to disease, violence) – Highly stressful role; burnout – Limited advancement for EMTs – Tension between paid and volunteer staff – Huge rural shortages; especially at paramedic level
Comments	– Significant use of volunteers; usually below Paramedic level

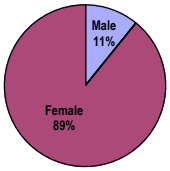
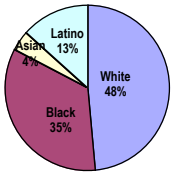
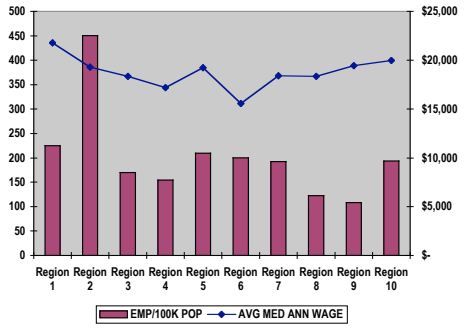
One reason EMTs experience a high turnover rate is that private sector employment does not compensate them well, compared to other occupations. As part of the ongoing Longitudinal Emergency Medical Technician Demographic Study (LEADS) Project, Brown, Dawson, and Levine determined that 62% of EMT-Is do not have adequate retirement plans, 94% believe they should be paid more for the job they do, most are not satisfied with the appreciation and recognition they receive from their employers, 35% are not satisfied with their benefits, and most feel they have minimal advancement potential.

TABLE 3:	Pharmacy Aides
Estimated Number	– 60,000 employed in 2002 – Projected total job openings in 2012 = 82,000 (37% increase) – Employment Growth Rating (BLS) = **AVERAGE**
Demographics	  – Average age: N/A – Vacancy/turnover: N/A
Education/ Training	– Informal; on the job training – No certification or registration – Highest level of attained education: employees age 25-44 • 36.6% High school or less • 49.8% Some college • 13.5% Bachelor or more
Average Salary	– Median annual salary $18,430 in 2003 – Seeing minimal gains (0.4% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 80% Retail chains – 10% General hospitals – 10% Mail order, outpatient clinics, pharmacy wholesale
Key Challenges	– Advancement is limited; retail training is not easily transferable to many other healthcare roles – Low pay – High part time employment; limits wages and benefit access – No national organizing agency
Comments	– Demographic data is for all Healthcare Support occupations

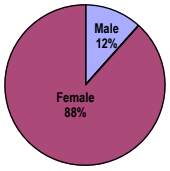
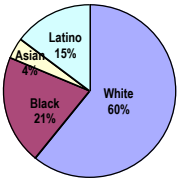
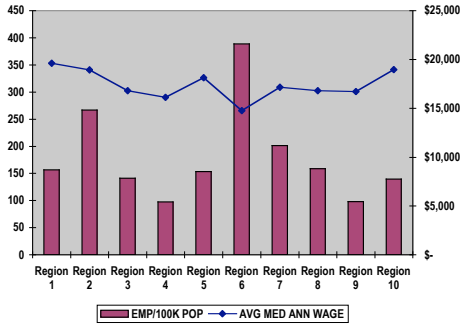
Miami Edison High School has a Health Professions Magnet program that offers students the opportunity to experience a variety of healthcare related occupations and prepare them to directly into the healthcare workforce or help them prepare for post secondary nursing and allied health educational programs. This four-year track incorporates job shadowing, laboratory practice and volunteer programs in a range of settings to help students better understand and cultivate interests in healthcare careers. One path on the allied track is the Community Pharmacy Aide that prepares students to begin employment after graduation or enter a Pharmacy Technician completion program.

TABLE 4:	Physical Therapist Aides
Estimated Number	– 37,330 employed in 2002 – Projected total job openings in 2012 = 60,330 (62% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age: N/A – Vacancy/turnover: N/A
Education/ Training	– Informal; on the job training – Some employers require a high school diploma – Not licensed – Highest level of attained education: employees age 25-44 • 16.0% High school or less • 61.5% Some college • 22.5% Bachelor or more
Average Salary	– Median annual salary $21,070 in 2003 – Seeing minimal short term gains (1.9% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 45% Offices of other healthcare practitioners – 27% General hospitals – 11% Nursing care facilities – 5% Physician offices
Key Challenges	– Injuries due to lifting, stooping, etc – Advancement is limited; assistant jobs typically require associate degree – High part time employment; limits wage and benefit access – Job growth may be slower in short term due to changes in reimbursement and regulations
Comments	– Demographic data is for Physical Therapy Assistants and Aides

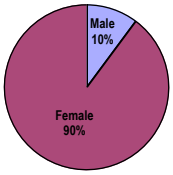
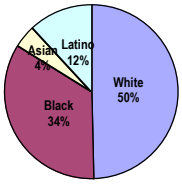
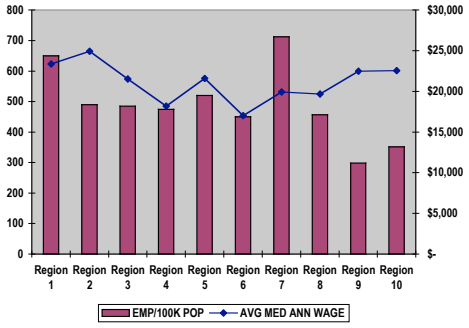
Jeff Dale has been in the physical therapy business for over ten years. He began as an aide at Angelview Crippled Children's Society. Not having the time or money to devote towards a full-time scholastic program, he immersed himself in his work instead. After some research, he discovered that his five years of full-time work under the guidance of a registered physical therapist, plus a mere 15 units of college credit, qualified him to petition the physical therapy board. He was allowed to take the licensing exam and is now a licensed physical therapy assistant and Program Director of Physical Therapy at the Carlotta, a highly respected nursing facility in Southern California. Jeff's story is an example of how a commitment to a career and a persistent attitude can result in success.

TABLE 5:	Home Health Aide
Estimated Number	– 579,700 employed in 2002 – Projected total job openings in 2012 = 934,700 (61% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age of LTC workers: 48 – Turnover rates estimates range from 45-100%
Education/ Training	– No formal requirements – Majority trained on the job – Voluntary certification; some states require physical exam – Highest level of attained education: employees age 25-44 • 62.7% High school or less • 31.4% Some college • 5.9% Bachelor or more
Average Salary	– Median annual salary $18,200 in 2003 – Seeing minimal gains (0.6% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 36% Home health services – 15% Residential mental health facilities – 13% Community care facilities for the elderly – 13% Individual and family services
Key Challenges	– High emotional demands – High rate of injury from lifting patients – Low wages, limited/no benefits – Few to no opportunities to advance – Roles are not well designed or supervised – Lack of respect and public awareness
Comments	– Demographics and Education statistics are for Nursing, Psychiatric & Home Health Aides – Home health agencies reporting vacancy rates of almost 11% in 2001

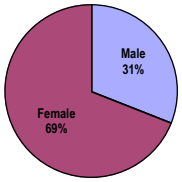
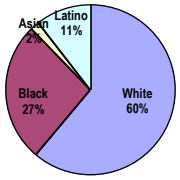
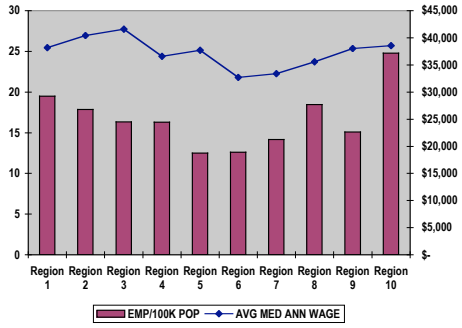
An annotated bibliography of articles on home care revealed that there is a low level of awareness among physicians about the complexities involved in home care (Steel, Leff & Vaitovas 1998). Analysts and practitioners have suggested improved training and outreach across the medical field to streamline information and provider options. (Direct Care Alliance)

TABLE 6:	Personal & Home Care Aide
Estimated Number	– 608,000 employed in 2002 – Projected total job openings in 2012 = 951,000 (56% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age of LTC workers: 48 – Vacancy rate: ~11% for home care aides
Education/ Training	– No formal requirements – Majority trained on the job – Voluntary certification; some states require physical exam – Highest level of attained education: employees age 25-44 • 59.6% High school or less • 32.1% Some college • 8.2% Bachelor or more
Average Salary	– Median annual salary $16,700 in 2003 – Seeing moderate gains (3.1% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 31% Home health services – 27% Individual and family services – 15% Residential mental health facilities – 8% Community care facilities for the elderly
Key Challenges	– High emotional demands; often unpleasant duties – May need to travel and provide own transportation – High rate of injuries due to lifting patients – Low wages, limited/no benefits – Few to no opportunities to advance – Roles are not well designed or supervised – Lack of respect and public awareness
Comments	

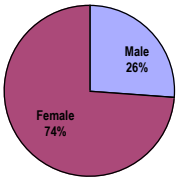
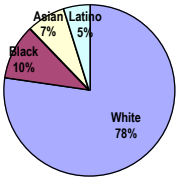
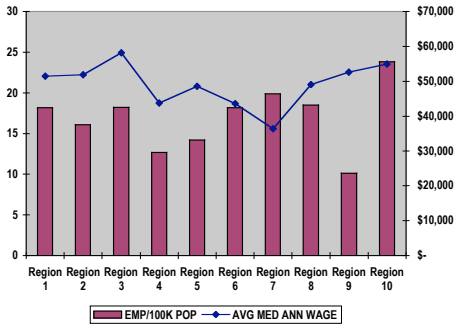
A 2002 study found that compared to the late 1980s, home care aides in the late 1990s were younger, more educated and more likely to have children (Yamada 2002). While home care aides tended to be older than nursing home aides and hospital aides in both the 1980s and the 1990s, the mean age of home care aides declined in the 10-year period. While no data were available on citizenship in the late 1980s, home care aides were significantly less likely to be native-born US citizens than were nursing home and hospital aides in the late 1990s.

TABLE 7:	Nursing Aides, Orderlies & Attendants
Estimated Number	– 1,375,000 employed in 2002 – Projected total job openings in 2012 = 1,898,000 (38% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age: 37 (for CNAs employed in nursing homes) – Turnover rates estimates range from 45-100%
Education/ Training	– Typically informal; on the job training – Some States require formal training program for those employer in nursing care facilities – State registry for some roles; voluntary certification available – Highest level of attained education: employees age 25-44 • 62.7% High school or less • 31.4% Some college • 5.9% Bachelor or more
Average Salary	– Median annual salary $20,800 in 2003 – Seeing moderate gains (4% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 44% Nursing Care Facilities – 26% General Hospitals – 8% Community Care for the Elderly Facilities – 4% Employment Services
Key Challenges	– Low wages and limited access to benefits – High turnover and high projected need – Limited training – Lack of advancement opportunities
Comments	– Demographics and Education statistics are for Nursing, Psychiatric & Home Health Aides

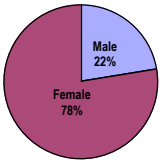
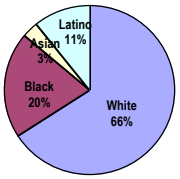
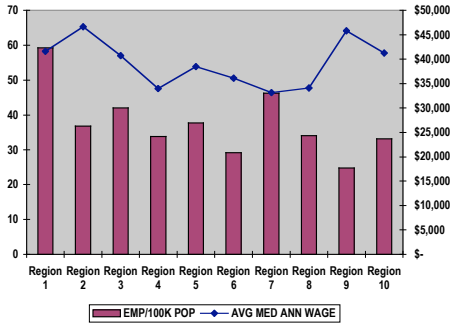
The Southeast Los Angeles County WIB) has a 95% success rate in helping people on welfare transition into the workforce. Currently, SELACO WIB, in partnership with the State of California, is administering a $2.1M grant program to recruit and train incumbent Certified Nurse Assistants (CNA) and Licensed Vocational Nurses (LVN) for career ladder upgrade training, which will result in 154 new LVNs and RNs. Beyond initial training and job placement, the SELACO WIB Nursing Program also provides for continued professional development and career advancement into more highly skilled occupations for the working poor and other underemployed workers.

TABLE 8:	Health Educator
Estimated Number	– 45,000 employed in 2002 – Projected total job openings in 2012 = 63,000 (40% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – High average age at 47 – Vacancy rate estimated at 11-20%
Education/ Training	– Master's degree is most common; some entrants have nursing or social work degrees – Licensure not required; voluntary certification available – Highest level of attained education: employees age 25-44 • 18.4% High school or less • 23.7% Some college • 57.9% Bachelor or more
Average Salary	– Median annual salary $38,100 in 2003 – Seeing strong short term gains (5.1% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 26% State and local government – 19% General hospitals – 12% Individual and family services – 5% Outpatient care centers – 38% Other: schools, federal government, large corporations
Key Challenges	– Persistent shortage and looming retirement burden – Areas of needed training including coalition building, strategic planning and cultural competency – Trend to higher levels of minimum education and certification may leave paraprofessionals behind
Comments	– Demographic data is for all Miscellaneous Community and Social Services Specialists – Average age and vacancy rate data is for all public health workers

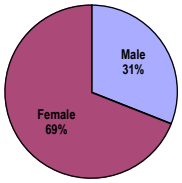
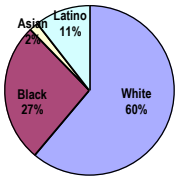
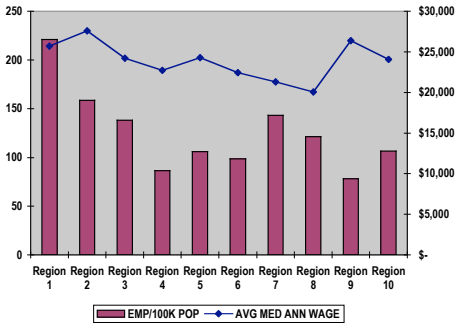
Sixty-two percent (62%) of the largest public health agencies in Missouri have health educators; however, only 30% of agencies that serve populations of 20,000 or fewer have a health educator on staff. Eighty-five percent (85%) of health educators in the largest agencies work full time, compared to the smallest agencies where only 43% are full time. Over half (53%) of health educators in the largest agencies have a master's degree or above; only 5% to 10% of health educators working in agencies serving other sizes of population have attained this educational level.

TABLE 9:	Occupational Health and Safety Specialists & Technicians
Estimated Number	– 41,000 employed in 2002 – Projected total job openings in 2012 = 55,000 (34% increase) – Employment Growth Rating (BLS) = **AVERAGE**
Demographics	  – Average age: N/A – Vacancy/turnover: N/A
Education/ Training	– Bachelor's degree is most common preparation; often combined with on the job training by employers – Some jobs require combination of fieldwork and written exam – Multiple certifications available; voluntary – Highest level of attained education: employees age 25-44 • 9.2% High school or less • 17.5% Some college • 73.3% Bachelor or more
Average Salary	– Median annual salary $48,300 in 2003 – Seeing strong short term gains (5% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 32% State and local government – 10% General hospitals – 5% Federal government – 54% Other: manufacturing, education, consulting, mining, research and engineering
Key Challenges	– Potential exposure to hazards and hostile environments – Personal safety threats on the job from combatants, animals – Confusing array of professional designations – Advancement limited without a bachelor's degree – Lack of women in the profession
Comments	– Demographic data is for all Health Practitioner and Technical Occupations

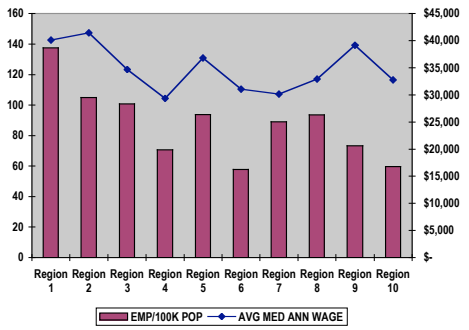
According to an ongoing study by the Board of Certified Safety Professionals, over 90% of the advertisements in Professional Safety magazine offering a professional safety position specify a degree and experience for candidates to qualify for a position. For the last five years, over half of the ads seeking safety professionals identified the Certified Safety Professional designation as a desired or required qualification.

TABLE 10:	Medical & Public Health Social Worker
Estimated Number	– 107,000 employed in 2002 – Projected total job openings in 2012 = 156,000 (46% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Nearly 30% of Social Workers are >55 – 13% plan to leave in the next 2 years (NASW 2005)
Education/ Training	– Bachelor's degree is required; a master's degree is standard for licensure and clinical practice – States have varying licensure, registration requirements – Highest level of attained education: employees age 25-44 • 7.8% High school or less • 18.4% Some college • 73.8% Bachelor or more
Average Salary	– Median annual salary $39,200 in 2003 – Seeing moderate gains (2.6% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 30% General and surgical hospitals – 11% Local government – 10% Nursing care facilities – 9% Individual and family services
Key Challenges	– High stress and burnout; low salaries – Limited advancement opportunities and few reward structures – Change in delivery system has brought increased case loads and reduced availability of supervision and staffing – Workforce is expected to reduce significantly over next few years – Profession not keeping pace with diverse client population
Comments	– Demographics, Education/Training and Key Challenges data is for all Social Worker categories – 17% of all Social workers are in private practice

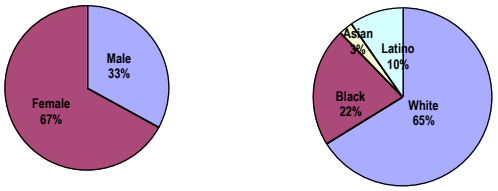
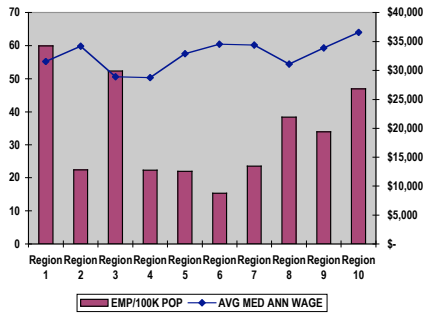
The largest number of unionized social workers in California are represented by SEIU, however only a small percentage of social workers belong to any union (Wong, 2002). A national study of social work estimated that only about 24% of U.S. social workers are union members; about half of these social workers are employed by local governments. (Barth, 2001)

TABLE 11:	Social and Human Service Assistants
Estimated Number	– 305,200 employed in 2002 – Projected total job openings in 2012 = 507,000 (66% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age: N/A – Attrition rates estimated as high as 77%
Education/ Training	– Mix of on the job training and certificate/associate degree programs (social work, human services, social sciences) – Employers prefer relevant experience and high school diploma – No required licensure or registration; some employers will do a background check for some roles – Highest level of attained education: employees age 25-44 • 15.2% High school or less • 24.0% Some college • 60.8% Bachelor or more
Average Salary	– Median annual salary $24,000 in 2003 – Seeing moderate gains (2.7% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 29% State and local government – 18% Individual and family services – 11% Residential mental health facilities – 5% Vocational rehabilitation facilities
Key Challenges	– Low wages; limited access to benefits – High turnover – Lack for formal role definition; programs of education – Lack of understanding of role; visibility
Comments	– Demographic data is for all Miscellaneous Community and Social Services Specialists – Population does not include large volunteer contingent

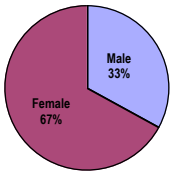
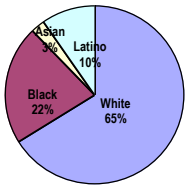
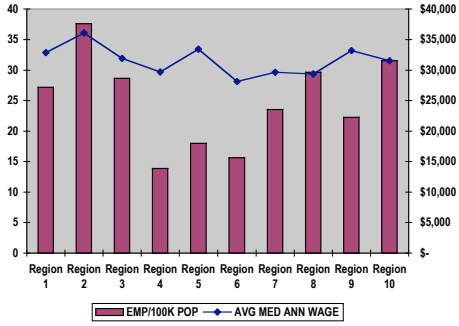
Denver Health and Community Voices teamed up with the Community College of Denver and the Denver Mayor's Office to pilot a community health worker (CHW) training and certification program to further develop the role of CHWs, in light of the educational and employment challenges CHWs face. A certificate can be very important, especially in agencies where credentialing is a major consideration in the hiring process. For individuals, the CHW certificate program is an entry to a health career. Denver Health designed an Essential Skills certificate for CHWs who successfully complete a 17-credit, one-semester program.

TABLE 12:	Child, Family School Social Worker
Estimated Number	– 274,000 employed in 2002 – Projected total job openings in 2012 = 385,000 (41% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	 – Nearly 30% of Social Workers are >55 – 13% plan to leave in the next 2 years (NASW 2005)
Education/ Training	– Bachelor's degree is required; a master's degree is standard for licensure and clinical practice – States have varying licensure, registration requirements – Highest level of attained education: employees age 25-44 • 7.8% High school or less • 18.4% Some college • 73.8% Bachelor or more
Average Salary	– Median annual salary $34,300 in 2003 – Seeing moderate gains (3.5% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 43% State and local government – 18% Individual and family services – 14% Elementary and secondary schools – 26% Other settings
Key Challenges	– High stress and burnout; low salaries – Limited advancement opportunities and few reward structures – Change in delivery system has brought increased case loads and reduced availability of supervision and staffing – Workforce is expected to reduce significantly over next few years – Profession not keeping pace with diverse client population
Comments	– Demographics, Education/Training and Key Challenges data is for all Social Worker categories – 17% of all Social workers are in private practice

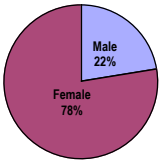
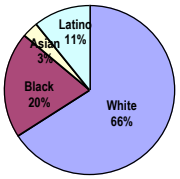
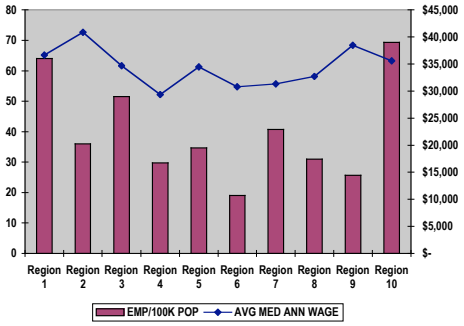
A growing component of social work practice actually aims to make foster care services a thing of the past. Using a system known as family preservation services, social workers are key members of teams that work to keep families intact. Some of these interventions include helping stabilize immediate crises, maintaining and strengthening family relationships, increasing families' coping skills and competencies and helping families to access useful services. (National Association of Social Workers)

TABLE 13:	Mental Health Counselors
Estimated Number	– 85,000 employed in 2002 – Projected total job openings in 2012 = 127,000 (49% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	 – 48% of National Certified Counselors are over 55 – Turnover rate estimates for mental health professionals range from 17% to 33%
Education/ Training	– Bachelor's degree is required; a master's degree is often required for certification – All but 2 States (CA, NV) require some form of licensure or registration – Highest level of attained education: employees age 25-44 • 10.6% High school or less • 19.6% Some college • 69.8% Bachelor or more
Average Salary	– Median annual salary $32,100 in 2003 – Seeing strong short term gains (7.2% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 20% Outpatient care centers – 17% Individual and family services – 13% Local government – 12% Residential mental health facilities
Key Challenges	– High stress and burnout; historical shortages and high turnover – Educational preparation may be out of step with current practice – Need for better ongoing training for paraprofessional component of workforce – Cultural competency awareness and training
Comments	– Demographic and Education/Training data is for all Counselor categories – Data does not include self-employed counselors

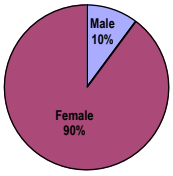
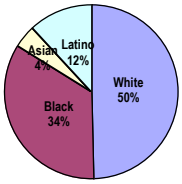
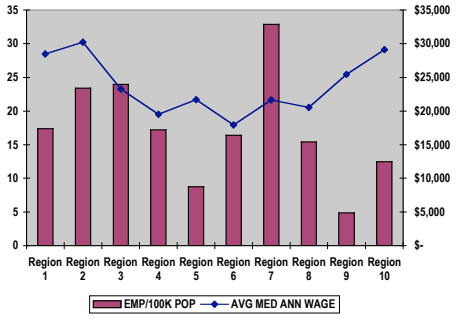
A current challenge in the mental health system is the condition of some educational programs. Many have not kept pace with technological developments in delivering care or on evidence based practice. Training also tends not to be offered to critical segments of the workforce that have enormous role in direct care including bachelor level staff, paraprofessionals, consumers and families (Hogan et al 2003)

TABLE 14:	Substance Abuse & Behavioral Disorder Counselors
Estimated Number	– 67,000 employed in 2002 – Projected total job openings in 2012 = 98,000 (46% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age is 45 – Turnover rate estimated at 50% annually
Education/ Training	– Some flexibility in minimum degree preparation; a master's degree is often required for licensure and national certification – All but 2 States (CA, NV) require some form of licensure, certification or registration – Highest level of attained education: employees age 25-44 • 10.6% High school or less • 19.6% Some college • 69.8% Bachelor or more
Average Salary	– Median annual salary $31,500 in 2003 – Seeing moderate gains (4.4% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 19% Residential mental health facilities – 18% Outpatient care centers – 16% Individual and family services – 11% Local government
Key Challenges	– Very high turnover – Meeting the treatment needs of dual diagnosis patients – Poor ongoing training for paraprofessionals – Perception of being least valued counseling sub-specialty – Variety of State and professional certification options; hard to categorize workforce by title or practice location
Comments	– Demographic and Education/Training data is for all counselor categories – Data does not include self-employed counselors

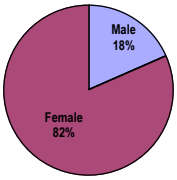
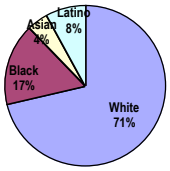
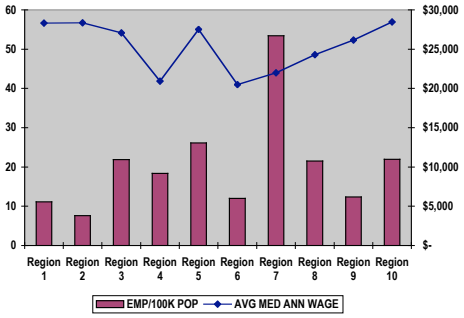
The Health Care Reform Act Initiative trains health care workers to meet the needs of a changing environment. Drug and alcohol prevention and treatment agencies are eligible to apply for such funds and there has been a marked increase in the awarding of funds for health care workers in the addiction field. Seven of nine sponsors that applied for support for training addiction workers received a total of $3 million in 2002. Such funding paid for testing and assessment, tuition and instruction, staff replacement costs. Addiction treatment agencies should have no trouble documenting the need for training in their field.

TABLE 15:	Mental Health & Substance Abuse Social Worker
Estimated Number	– 95,000 employed in 2002 – Projected total job openings in 2012 = 144,000 (52% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Nearly 30% of social workers are >55 – 13% plan to leave in the next 2 years (NASW 2005)
Education/ Training	– Bachelor's degree is required; a master's degree is standard for licensure and clinical practice – States have varying licensure, registration requirements – Highest level of attained education: employees age 25-44 • 7.8% High school or less • 18.4% Some college • 73.8% Bachelor or more
Average Salary	– Median annual salary $33,700 in 2003 – Seeing moderate gains (2.6% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 22% State and local government – 16% Outpatient care centers – 15% Individual and family services – 13% Psychiatric and substance abuse hospitals
Key Challenges	– High stress and burnout; low salaries – Limited advancement opportunities and few reward structures – Change in delivery system has brought increased case loads and reduced availability of supervision and staffing – Workforce is expected to reduce significantly over next few years – Profession not keeping pace with diverse client population
Comments	– Demographic and Education/Training data is for all Social Worker categories – 17% of all social workers are in private practice

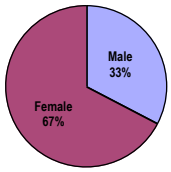
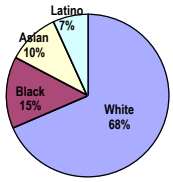
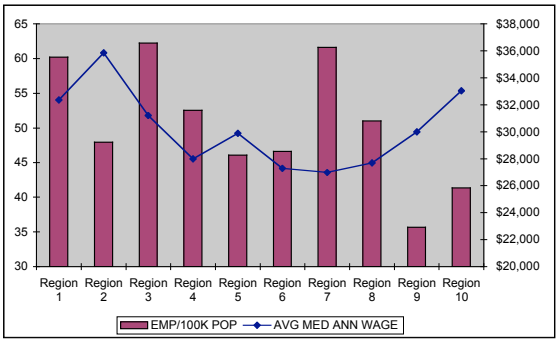
More MSW degrees than BSW degrees are conferred each year, although BSW programs are rising in popularity. In 2000, social work education programs graduated about 15,000 new BSWs and 16,000 new MSWs. The number of social workers graduating with bachelor's degrees increased by about 50% between 1995 and 2000, while the number of social workers graduating with master's degrees rose by about 25% during the same period. (National Center for Education Statistics www.nces.ed.gov)

TABLE 16:	Profile: Psychiatric Aides
Estimated Number	– 59,000 employed in 2002 – Projected total job openings in 2012 = 75,000 (27% increase) – Employment Growth Rating (BLS) = **AVERAGE**
Demographics	  – Average age: N/A – Vacancy/turnover rates: N/A
Education/ Training	– Typically informal; on the job training – Some States require formal training program – Some employers require a high school diploma – Not licensed – Highest level of attained education: employees age 25-44 • 62.7% High school or less • 31.4% Some college • 5.9% Bachelor or more
Average Salary	– Median annual salary $23,110 in 2003 – Seeing minimal gains (0.6% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 46% Psychiatric and substance abuse hospitals – 11% General hospitals – 8% Residential mental health facilities – 35% Other – local government, outpatient care centers
Key Challenges	– Low wages and minimal gains – Limited advancement without formal training – Lack of respect and recognition
Comments	– Demographics and Education statistics are for Nursing, Psychiatric & Home Health Aides

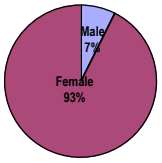
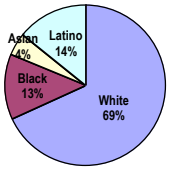
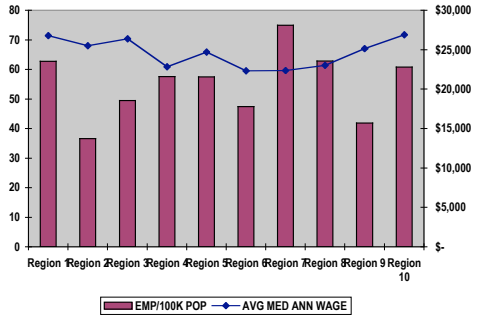
In 2000, SB 1748 (California Department of Mental Health, 2001d) established a task force to study challenges in the California mental and behavioral health care workforce. The task force focused on creating options for meeting the workforce needs of public agencies, including curriculum and training reforms and expansion of educational opportunities for youth. The task force also explored collaboration and partnership options between communities, public agencies, educational institutions and private/nonprofit organizations, which currently compete for a limited supply of workers. It studied and implemented a model career academy program to train entry-level mental health workers.

TABLE 17:	Psychiatric Technicians
Estimated Number	– 60,000 employed in 2002 – Projected total job openings in 2012 = 71,000 (18% increase) – Employment Growth Rating (BLS) = **SLOWER**
Demographics	  – Average age: N/A – Vacancy/turnover: N/A
Education/ Training	– Mix of on the job training and certificate/associate degree programs offered at community colleges – Four States require licensure (CA, CO, KS, AR) – Highest level of attained education: employees age 25-44 • 33.7% High school or less • 54.0% Some college • 12.3% Bachelor or more
Average Salary	– Median annual salary $25,670 in 2003 – Seeing no gain (-0.2% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 42% Psychiatric and substance abuse hospitals – 35% State government – 22% General and other hospitals
Key Challenges	– Potential for injury, exposure to violent patients – Limited advancement without more formal education – Wide variation in employment per capita makes national programming a challenge
Comments	– Demographics are for all Health Diagnosing and Treating Practitioner Support Personnel

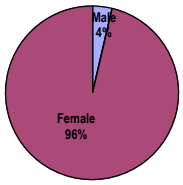
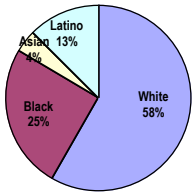
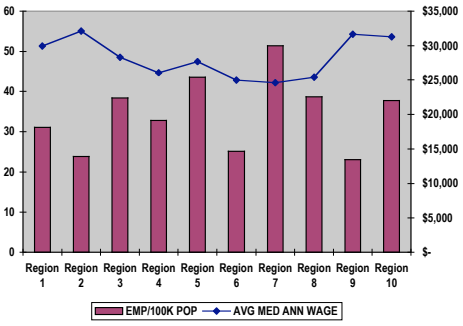
In California, it is likely that psychiatric technicians will be in increasingly short supply in the immediate future. There is strong evidence to show efficacy of education and training programs that integrate didactics and clinical training with part-time employment. Atascadero State Hospital's psychiatric technician training provides a twelve-month educational program in which enrollees are prepared for the California licensing examination while being employed part-time in a clinical setting as psychiatric technician trainees. Students in this program earn 60.5 units of college credit while working approximately 20 hours per week at a pay rate of about $12 per hour.

TABLE 18:	Clinical Laboratory Technicians
Estimated Number	– 147,500 employed in 2002 – Projected total job openings in 2012 = 215,000 (46% increase) – Employment Growth Rating (BLS) = **AVERAGE**
Demographics	  – High average age (46-66); by 2010, half the current laboratory workforce will be eligible for retirement – Vacancy rate ~6%
Education/ Training	– Associate degree or hospital certificate program (~200 accredited programs) – Some trained on the job – Some states require licensure or registration – Highest level of attained education: employees age 25-44 • 14.8% High school or less • 35.5% Some college • 49.7% Bachelor or more
Average Salary	– Median annual salary $30,100 in 2003 – Seeing moderate gains (~3% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 56% Hospitals – 32% Physician offices and medical & diagnostic labs – 12% R&D, education, government
Key Challenges	– Working conditions vary; high productivity demands – Historical shortages; increased workloads (OT and double shifts) – 30% reduction in number of educational programs – Wage disparities with other allied health roles – Poor recognition; public understanding of role – Rural staffing situation even more dire
Comments	

One of the best ways to recruit is to partner with a local program. Alamance Community College (North Carolina) and LabCorp have co-sponsored a MLT program since 1988. LabCorp offers space and resources in an alliance that benefits both organizations. MLT students spend the first year on campus and the second onsite at the regional lab where they are exposed to wider range of specimens and tests and access to PT work. Students are in great demand given their special training and LabCorp hires 50% of the graduates each year.

TABLE 19:	Medical Records & Health Information Technicians
Estimated Number	– 147,000 employed in 2002 – Projected total job openings in 2012 = 237,000 (61% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – High median age 46 – Vacancy rate estimated at ~20% (coders)
Education/ Training	– Associate degree or certificate program (182 accredited programs in 2003) – Some trained on the job by hospitals – Registered Health Information Technicians (voluntary) preferred – Highest level of attained education: employees age 25-44 • 35.5% High school or less • 48.1% Some college • 16.4% Bachelor or more
Average Salary	– Median annual salary $24,900 in 2003 – Seeing moderate gains (4.2% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 37% Hospitals – Balance in outpatient centers, physician offices, nursing care facilities and home health – Small percentage in insurance and public health roles
Key Challenges	– Eyestrain and repetitive motion disorders due to computer usage – Increasing complexity from rapid changes in regulations, high rate of innovation, shift to electronic medical records – Educational program capacity/faculty are lacking – Persistent shortages burden workforce with high workloads
Comments	– Additional 20K openings projected by 2012 due to separations – Need a bachelor's degree to advance in larger employersregistry and Medicare coding

Some healthcare organizations are now hiring full-time educators to spearhead continuing education efforts for coders. Two years ago, Erlanger Health System hired an HIM educator who provides on-site education and conducts medical record audits. She keeps coders informed about the latest procedures and the most current codes, says Bowen. If the educator spots an area that needs improvement based on the record reviews, she designs an educational session. "We had a person who did audits for several years," adds Bowen, "but we purposely changed the focus of this position so that people would feel comfortable going to her if they're having trouble with a particular area."

TABLE 20:	Medical Transcriptionists
Estimated Number	– 100,800 employed in 2002 – Projected total job openings in 2012 = 141,800 (41% increase) – Employment Growth Rating (BLS) = **FASTER**
Demographics	  – Average age: 49 – Vacancy/turnover rate: N/A
Education/ Training	– Training in a medical transcription program required – Some on the job training if already an experienced medical secretary – Voluntary certification available – Highest level of attained education: employees age 25-44 • 36.6% High school or less • 49.8% Some college • 13.5% Bachelor or more
Average Salary	– Median annual salary $27,800 in 2003 – Seeing moderate gains (2.4% from 2002-2003)
Regional Variation	Employment Per Capita & Median Annual Wage - by DHHS Region 
Workplace Distribution	– 41% General hospitals – 33% Offices of physicians – 12% Business support (transcription services, insurance) – Other labs, home health agencies and other healthcare offices
Key Challenges	– Medical issues due to prolonged sitting and repetitive movements – Aging workforce contributes to shortage – Movement to outsourcing (8-10% overseas) – Poor recognition; public understanding of role
Comments	– Ethnicity data is for all Healthcare Support occupations – Certification agency is American Association of Medical Transcription

The American Association for Medical Transcription is investigating and laying the groundwork for the development of a Professional Level 1 certification examination for "entry level" transcriptionists in order to address the issue that all medical transcriptionists become credentialed. Other specialty-type certification exams will be investigated, but an entry-level certification will provide an opportunity for a broader number of medical transcriptionists to become certified.

CLINICAL SUPPORT

MEDICAL ASSISTANT

Medical assistants are one of the larger frontline occupational groups in this study. They typically work under the direct supervision of a physician or other licensed professional and perform a combination of routine clinical and administrative functions. Specific duties vary by employment size and setting but those in smaller settings tend to be generalists while those in larger, more complex environments often specialize in certain aspects of the role. Their administrative responsibilities can include patient reception and assisting with insurance forms and referrals, scheduling appointments and other clerical tasks that support the smooth operation of the office or clinic. Their allowed scope of clinical responsibilities varies by State but may include medical history intake, exam room preparation, taking patients' basic measurements and readings and instructing patients about procedures and post-care needs. "Medical assistant" is a generic term and some workers have more specialized titles that reflect the type of clinical practice they support such as orthopedic assistant, clinic assistant or chiropractic assistant (U.S. Census, 2000). There is a national professional association for medical assistants (American Association of Medical Assistants) and several specialty area assistant organizations.

There were over 365,000 medical assistants employed in the United States in 2002 according to the Bureau of Labor Statistics and this group represented almost 8% of the frontline workers under this study. The U.S. Census estimates over 600,000 medical assistants and this discrepancy is likely related to how the high number part time workers are accounted for (Tache & Chapman, 2004). Regional variation of per capita medical assistants is moderate with spikes in the West (California, Hawaii, Arizona, Nevada) and parts of the South (Texas, Louisiana, Arkansas, Oklahoma, New Mexico). The Bureau of Labor Statistics data also reveals that healthcare support workers, the occupational cluster medical assistants are part of, is predominantly female (89%) and that over half are White (58%). Another significant segment are African American (25%) while 13% are Hispanic/Latino. By far, the largest segment (70%) of medical assistants is in office

settings of physicians and other healthcare personnel. They are also found in hospitals (14%), outpatient care centers, government agencies, labs and nursing care facilities.

Historically, most medical assistants entered the occupation via informal, on-the-job training. The training is often very specific to the setting or office and provided by current office managers or peers. Over 85% of medical assistants have less than a bachelor's degree (BLS, 2002). Driven by high demand, there are now a growing number of vocational and associate degree programs available to provide training prior to job entry. The two main accrediting bodies, the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the Accrediting Bureau of Health Education Schools (ABHES) accredit 495 and 170 medical assisting programs respectively. More and more programs are being offered on nights and weekends and some offer a specific focus on cultural competence, recognizing a key need to produce more assistants that mirror the patient population. Program length varies widely and tuitions can range from $1,200 to over $15,000 (American Medical Association, 2005). Many of the educational providers in this area are for-profit institutions that recognize the market need and financial opportunity involved in training these workers.

There are voluntary national certifications and registrations available but while some states require examination before performing certain clinical tasks, no state currently requires any form of licensure, unless basic x-rays are part of the scope of duties. After entering the profession, those with formal education and certification have the best outlook for advancement within the profession. Some medical assistants specialize in certain areas of medicine or clinical practice while others focus on administrative aspects and can advance to office manager. Opportunities vary depending on the size and scope of the setting. The highly specific nature of the on-the-job training can sometimes limit mobility as it can hinder transferring to other settings. Advancement to most other healthcare roles typically involves more formal education or training which can be a burden.

The 2003 median annual salary for medical assistants was $24,300, very close to the weighted average for the total frontline study group. Median wage levels do not appear to be gaining rapidly with only a 1.5% increase from 2002 to 2003 and they are apparently not all that responsive to adding a voluntary certification. Estimates show that only 12.5% of the workforce is certified and that obtaining the certification only increases wages by 5-10% (American Association of Medical Assistants, 2003). Median wage regional variation is moderate, with high points in the Northwest and the Northeast. The Northeast wage spike is correlated with the lowest per capita employment. See the profile table in Appendix A for more details. This is a fast growing occupation with projected employment in 2012 of almost 580,000, a 59% increase in job openings due to growth. The BLS ranks it as the fastest growing occupation between 2002 and 2012. The highest growth area is in the outpatient realm, fueled by technological advances and the growing aged population which will drive volume in office visits and outpatient procedures. This occupation has a high level of part time workers, which has an impact on many areas include wages, access to benefits and turnover.

Although the physical work environment is generally pleasant and hours are typically office based, turnover is reportedly very high, estimated at 20-30% annually (Tache, 2003). This is likely related to the relatively low wages and the limited advancement opportunities. Recent years of strong economic conditions may also have drained some candidates and incumbents out of the role and into higher paying alternatives. There are documented shortages for this role that likely places a higher burden on those still employed (Tache and Chapman 2004). Some medical assistants may also have a hard time adapting to the increasingly complex medical world and the advancements in clinical and operational support technologies.

Overall, medical assistants represent a large and growing segment of the frontline work force. They exhibit clear challenges around advancement and work environment (low wages, access to benefits, recognition) and would seem to be good candidates for programmatic support. The primary caveat to this is the highly decentralized nature of their primary employment setting and concerns about the ability to engage and motivate

physicians and other healthcare providers who operate as solo or small group practices. Any consideration of additional attention or investment in this role would need to consider how best to harness these disparate employers or concentrate on the much smaller segment of the group that works in more centralized settings such as hospitals and outpatient care centers.

EMERGENCY MEDICAL TECHNICIAN & PARAMEDIC

The emergency medical technician (EMT) and paramedic occupational group encompasses four core levels of increasingly qualified clinical support workers that can be called to respond to patients in a range of rapidly emergent situations. They offer care and transport to medical facilities and are either following protocols developed by emergency medicine physicians or working under the direction of a remotely located physician. Each level is certified to provide progressive types of medical care based on varying degrees of education and training. The first three levels are categories of EMT and focus on basic life support while the fourth and most advanced level is designated a paramedic. First responders provide the most basic care on-site but are not typically involved in transport. They are often primarily employed as firefighters and police officers. The next two EMT levels, basic and intermediate, are certified to provide care both at the scene and during transport, with the intermediate level qualified to handle more complex tasks such as starting IVs and using defibrillators. Paramedics are at the top of the classification and can do all of the things EMTs can, plus administer medications, interpret EKGs and utilize other complex equipment needed in advanced life saving situations. States vary in what they allow under each level's scope of practice, in effect, creating a system of over 44 different levels of EMS provider certifications

In total, there are almost 180,000 workers employed as EMTs and paramedics across the U.S. (BLS, 2002). It is important to note that this figure does not include the significant numbers of volunteers that also serve in these roles, typically below the paramedic level. The National Registry of Emergency Medical Technicians (NREMT) estimates the total number of EMS providers at over 800,000. The distribution varies by locale but the volunteer figure can often far overshadow the career contingent. For example, in New Jersey, there are approximately 4,300 employed EMTs and paramedics (BLS, 2002) but over 80% of their basic life support squads are voluntary, made up of more than 20,000 volunteer EMTs (U.S. Senate Testimony – Hearing on Ambulance Service and Medicare Program, 2001).

Unlike the majority of the roles that are part of this phase of the study, the EMT and paramedic occupational group is predominantly male (68%). This may be related to the large number of fire and police force workers that are part of the emergency response system. The vast majority of employed workers are White (84%), a recognized cultural competency issue for the profession given that the current demographic profile of the U.S. population identifies over 26% as part of an ethic minority (Franks et al., 2004). There are relevant urban versus rural differences, with urban EMS personnel typically being younger, career professionals, who are higher paid. Rural EMS providers are more likely to be volunteers and are less likely to be at the paramedic level. Wage levels vary across the EMT levels, with an overall 2003 median annual salary of $24,760 (BLS, 2003). Wages exhibit moderate short-term growth, in part due to the current Medicare fee schedule and other budgetary pressures. Workers employed within local government such as fire and police agencies tend to make higher salaries than those employed by hospitals or private EMS companies. They also typically have access to the same rich set of benefits as firefighters and police officers. Experienced paramedics can achieve higher salary levels, closer to $50,000 annually.

Entry to the occupation requires formal education and training of varying lengths based on the National Highway Traffic Safety Administration (NHTSA) mandated hours. First responder status requires a minimum of 40 hours, basic and intermediate EMTs range from 100 to 400 hours and paramedics require over 1,000 hours, often culminating in an associate or bachelor's degree. All involve field training but paramedic programs typically require leaving the field for a period of time to complete the didactic portion of the education. Programs are offered in various settings including community colleges, technical schools and EMS academies but regardless of setting, all levels of EMT curriculum are set by the federal government through the NHTSA (AMA Press, 2005). Almost 50% of the employed workers have a bachelor's degree or higher (BLS, 2002). All states require some form of certification and most require registration with the National Registry of Emergency Medical Technicians (NREMT). Maintaining this registration requires ongoing employment and continuing education. Advancement within the EMT and paramedic levels is possible through accumulating increased hours

of training and/or education. Beyond the core ladder, options are limited for EMTs without more formal education but paramedics have more alternatives and can move in to roles in management, dispatch or they can become instructors.

According to the Bureau of Labor Statistics, this occupational group will be growing faster than average over the next five to seven years and is projected to increase (due to growth and separations) by 47% to 259,000 career employees by 2012. This demand will be fueled in part by the increased need for emergency care due to the aging population and by expected high rates of turnover due to emotional stress, physical demands of the role and a perceived lack of recognition. Wage disparities with other healthcare roles are also cited as a source of turnover. There is historical evidence of shortages in EMS personnel, especially in rural settings. The Journal of EMS reported in 2005 that recruitment and retention of paramedics was a top priority for most state ambulance associations and that NREMT data showed that 19 states had reported declines of over 15% in people taking the paramedic test from 1999 to 2003.

EMTs and paramedics are constantly in high stress situations and subject to hazards from exposure to potentially unstable patients and dangerous care settings. Due to the need for 24-hour availability, many work non-standard schedules and long hours. Other pressures include reported tensions both with physicians and between career and volunteer workers. There can also be extra pressures on rural EMTs and paramedics due to what is known as the "rural paramedic paradox" (NAEMSE, 2004). This has workers with the lowest training and least resources dealing with patients that are the farthest from care. In these situations, transport time can range up to three to four hours, greatly complicating the call and increasing likelihood of adverse outcomes. As a profession, the EMS system struggles with a lack on clarity on what EMS is and how widely it varies from locale to locale, complicating efforts to introduce improvement initiatives. Many in the profession are calling for more standardization but believe that NHTSA, the main federal agency involved, does not have enough authority to really influence the profession beyond the basic curriculum it leads.

EMTs and paramedics are a significant occupational group based on employment size and when volunteers are factored in, the profession becomes even more of a presence within this studied frontline workforce group. They have high turnover and a range of challenges identified as key drivers behind it. They are typically employed in centralized settings such as local government, hospitals and private agencies and there are some key professional and accrediting bodies that could potentially be harnessed to participate in strategic workforce improvement initiatives.

PHARMACY AIDE

Pharmacy aides represent the starting rung in the pharmacy operations occupational ladder. While important to the smooth functioning of a pharmacy, given their limited training, they may only perform a narrow range of tasks, primarily administrative and customer service oriented. All clinical activities and inquiries are handled either by pharmacy technicians or a licensed pharmacist. There can be some grey areas between pharmacy aide and pharmacy technician responsibilities but according to a 1999 study by Arthur Andersen on pharmacy activity costs, over 55% of pharmacy aide time is spent on transactions related to the initial presentation of the prescription by a customer and then delivering it to the customer. Pharmacy aides are also known as dispensary attendants, pharmacy/drug clerks or pharmacy assistants.

In total, there are approximately 60,000 workers employed in this occupational group (BLS, 2003). The BLS occupational employment statistics show that 80% of workers are employed in the retail setting, both by chain and independent pharmacies. Another 10% can be found in hospital-based pharmacies and the remainder in pharmacy mail order operations, wholesalers and clinics (BLS, 2004). The median annual wage in 2003 for pharmacy aides was $18,500 and experiencing slow growth. Aides in hospitals, on average, made more than those employed in retail settings. Many pharmacy aides are part time and less likely to receive benefits such as healthcare and retirement.

There is no available demographic data specifically on pharmacy aides but the profile for all healthcare support occupations, of which this is a component, shows an almost 90% female workforce and one where the majority of workers are White (BLS, 2003). Entry to the occupation is informal and typically involves general on-the-job training from the employer, much like other clerks would receive. There are some tasks related to patient records, insurance forms and FDA record keeping that call for specialized training. Although programs for pharmacy technicians are increasing as the demand grows, there do not seem to be many organized training programs for aides. Likewise, pharmacy aide certification does not seem to exist, although workers can try and obtain more general

nursing or medication aide certifications. One important job requirement for employers is a clean record with no prior drug or substance abuse and many require a high school diploma. Over 35% of these employees in this occupational group aged 25 to 44 in this have only a high school education or less (BLS, 2003).

The job outlook for this role is average, with the BLS projecting a 17.6% gain in employment due to growth between 2002 and 2012. Most of this growth is fueled by the increased demand for pharmacy services due to the aging population. Advancement is limited within the occupational group but there is the opportunity to move to pharmacy technician with additional training or a completion program. This may be an attractive option for some pharmacy aides, as the November 2003 annual median salary for technicians was 27% higher than for aides and, with a projected employment growth of almost 30% by 2012, pharmacy technicians are growing faster than average.

Pharmacy aides are a smaller group within the frontline occupations studied and are projected to grow only as fast as average. They share some of the same challenges around advancement, low wages and poor recognition with other clinical support roles. One unique aspect is the predominant employment in the retail sector, a characteristic that may place them outside the core settings that future RWJF workforce initiatives will focus on. There is little published data on this occupation, primarily do to its lack of licensure or certification alternatives, so additional study may also be indicated.

PHYSICAL THERAPIST AIDE

Physical therapist aides' (also known as physical therapist attendants) mission is to enhance the productivity of patients' therapy sessions by performing administrative tasks and by ensuring the treatment surroundings are well maintained. They perform some routine treatment activities such as putting patients into equipment and providing water treatments or paraffin baths. They may also transport or assist patients in moving between locations. Much like pharmacy aides, physical therapist aides are commonly discussed in the literature only as a part of a more comprehensive occupational group that also includes a higher-level role, the physical therapist assistant. Some in the field refer to those roles as "paratherapists" (Longhurst, 1997). These paratherapists are used to extend the core therapist and allow for significant productivity gains. Visit frequency, with the use of assistants and aides, can grow from one to two sessions per week to five, without sacrificing quality or increasing costs (Longhurst, 1997).

Physical therapist aides are a very small occupational group within the healthcare support workers category. The BLS reports that in 2002 there were just over 37,000 employed in this occupation. At less than 1% of the total frontline workforce population under study, this makes physical therapist aides the smallest group being operationally defined. Similar to many of the healthcare support roles under study, the combined physical therapist assistant and aide group is predominantly female (75%). Their ethnicity is also predominantly White, with almost 85% identified as White (BLS, 2003). This puts them out of alignment with the potential patient population based on the current profile of the U.S. population. Unlike physical therapist assistants that generally have an associate degree, aides are typically informally trained on-the-job by peers, assistants or even licensed physical therapists. While there are a small number of short vocational training programs for physical therapy aides offered at community colleges, there are over 245 accredited assistant programs in the U.S. Some employers require aides to have a high school diploma and over 75% of those employed between the ages of 25 and 44 have less than a bachelor's degree (BLS, 2002). There is no certification or registration

requirement for aides, although some states have licensure and or qualifying exam requirements for assistants.

While options can be limited for aides, the most obvious form of advancement opportunity is moving up to the assistant level. Depending on the requirements of the state and local employer, an aide may be able to qualify for equivalency based on work experience or they might have to complete an associate degree program. There is also some crossover potential to move to related discipline areas such as occupational and recreational therapy. There is a concept called "multi-skilling" that is talked about within the therapist community suggesting that paratherapists being prepared at the post-secondary vocational level be cross-trained to function in more than one therapy discipline (Pew Health Profession Commission, 1995; Longhurst, 1997). Promoting this concept would greatly enhance the transferability and promotional opportunities for aides and assistants.

Most physical therapy aides work in offices of physical therapists, other allied practitioners and physicians (50%). Another large percentage (27%) is employed in hospitals or nursing care facilities (11%). Hours are typically in synch with standard patient appointment schedules but working conditions can vary, especially between office-based and facility-based environments. Aides and assistants are at risk for workplace injury due to patient contact and may have to deal with difficult or abusive behavior. The median annual salary in 2003 as reported by the BLS was $21,070, the fifth lowest in this frontline workforce study sample. Fringe benefits vary by employer type but are more common in facility-based settings and when the worker is employed full time. By contrast, physical therapist assistants' median annual salary in 2003 was 77% higher at $37,280. This disparity reflects the significantly greater scope of practice of the assistant, to the point that they can provide much of the therapy once a licensed therapist has evaluated a patient and developed a treatment plan.

The job outlook for aides is strong, with an over 46% increase in openings due to growth projected by the BLS by 2012. The growth for assistants is also strong, driven by the

increasing need to leverage activities previously done by a licensed physical therapist to a less costly team member. There are some potential caveats to this growth tied to proposed Federal reimbursement changes for physical therapy (BLS, 2004). These could have a detrimental short-term effect on need if employers scale back due to limited budgets. Another potential limitation is the willingness of licensed therapists to supervise aides and assistants as part of their style of practice. Some appreciate the potential productivity benefits, while others prefer to work on their own.

Although this is a very small group, there may be opportunities for enhancing both the current workforce outlook for this role and creating stronger linkages to both progressive levels of physical therapy occupations or roles in other allied specialties. It might make sense to consider several of these in combination to gain critical mass. The primary obstacle to improving the aides' situation may be similar to that of medical assistants as the primary employment setting is provider office-based. Initially, it may be worth considering a focus on the almost 40% of physical therapist aides that work in more organized settings (hospitals and nursing care facilities).

HOME HEALTH AIDE and PERSONAL AND HOME CARE AIDE

Home health aides, personal and home care aides, (along with nursing aides, and orderlies) are professions that are often collectively grouped under the categorization of the long-term care (LTC) workforce, paraprofessional workforce, and direct-care workforce. This is the standard in regards to the data that is available on these occupations and studies such Harris-Kojetin et al 2004, explicitly state that data reported refers to nurse aides, personal care aides, home health aides, and personal and home care aides as collective professions within the broader long-term care/paraprofessional/direct-care workforce. As such, while there is distinct baseline data about the demographics and job duties of home health aides and personal and home care aides, the majority of data capturing the complexities and challenges to the profession does not distinguish between occupations and is representative of the long-term care workforce, and home care which includes both of these occupations. Additionally, while home care agencies provide a substantial amount of services through professional home care, family members may also receive training to provide home care as "independent providers" and in some states may receive pay through Medicaid (Mollica, 2001). Therefore, the distinct baseline data for home health aides and personal and home care aides will be presented below followed by the available, relevant data regarding long-term and home care delivery.

Home Health Aides

Home health aides help elderly, convalescent, or disabled persons live in their own home by providing health related services such as administering medications, checking vital signs, assisting with prescribed exercises, along with bathing, dressing, and grooming. While there is overlap with duties performed by personal and home care aides, home health aides specialize more in health-related care. There were just over 579,000 home health aides employed in the U.S. in 2002 (BLS, 2002) and particularly in light of the country's aging population, the employment growth is predicted to be faster than average. The home health aide profession is a predominantly female profession, and is made up of 89.3% women (BLS, 2002) and approximately half are of minority status with 35% African-American and 13% Hispanic/Latino (BLS, 2000). The median wage for home health aides in the U.S. was $18,200 in 2003 (BLS, 2003), which is the second lowest

wage for the frontline occupations profiled in this study, behind personal and home care aides.

Personal and Home Care Aides

Personal and home care aides help elderly, ill, or disabled persons live in their own homes or a residential care facility by providing housekeeping, assistance with errands, accompany individuals outside of their home, and assist in childcare and personal care. While many of their duties overlap with home health aides, personal and home care aides generally do not assist in health related care services. In 2002 there were 608,000 personal and home care aides employed in the U.S. and like home health aides and the related long-term care professions, employment is expected to grow faster than average. The profession of personal and home care aides is predominantly female as over 88% of the profession are women (BLS, 2002) and over one-third of home health aides are of minority status with 21% African-American, and 15% Hispanic/Latino (BLS, 2002). The median annual wage for personal and home care aides in 2003 was $16,700 which is the lowest wage of all of the occupations profiled in this report.

Distinct from nursing aides who work in healthcare settings, home health aides and personal and home care aides work primarily in patient's homes. They are employed through residential care facilities, home health care agencies, individual and family services, and personal care facilities. Additionally, it is important to note that a "gray market" exists within the long-term care workforce in which there is a substantial market of workers hired directly by individuals and families who consequently do not show up as employed in either the BLS or other government data systems. A national study found that up to 29% of workers providing long-term care assistance to the Medicare population in the home were self-employed (Leon and Franco, 1998).

The National Association of Home Care offers voluntary certification although there is a lack of standardized training for workers. The federal government mandates some training for nursing home and some home care workers, however there are few prescribed hours and curricular specificity for entry-level training and ongoing skill development

(Direct Care Alliance, Issue Brief 3 www.directcarealliance.org). The lack of formalized training coupled with a high turnover rate results in agencies devoting very few resources to entry-level training and developing competency-upgrading programs for existing workers. Consequently, there are very few opportunities for advancement (Kopiec, 2000) and the high turnover rate also results in high replacement costs for long-term care providers. This redirects resources away from consumers and employers must often rely on high-priced temporary agencies and repeatedly pay for recruitment and training of new, entry-level caregivers (Direct Care Alliance www.directcarealliance.org).

The high turnover rate reflects the reality of a profession contending with physical and emotional demands, poor working conditions, low wages, and minimal training and advancement opportunities. Sometimes there are no benefits offered all and wages are overall not competitive with other jobs (Case et al. 2002). A report by the Institute for the Future of Aging Services found that 40%-45% of home care aides lack health insurance (Lipson & Regan, 2004). Even when insurance is offered, some workers are unable to benefit, as a report on the long-term care profession in Iowa indicated that workers often cite the high cost of participating and the lack of eligibility as reasons for not enrolling in their employer's health insurance plan (Stowell-Ritter et al. 2003). The lack of insurance affects not only the workers but also their employers and the clients they serve. Low wages, lack of access to health insurance and other causes force many long-term care workers to leave the profession and the cost of direct-care worker turnover to employers and taxpayers is $3,500 per employee (National Clearinghouse on the Direct Care Workforce, 2004). In Iowa, turnover costs the Iowa Medicaid program and employers millions of dollars annually (Stowell-Ritter et al. 2003). Without health insurance, workers do not receive preventative health care or timely care for injuries and illnesses resulting in workers missing work more often and thereby affecting the quality of care received by their clients (Stowell-Ritter et al. 2003).

Overall, long-term care jobs are not well designed or supervised and workers perceive a lack of respect from management (National Center for Health Workforce Analysis 2004) along with an overall lack of public awareness about what constitutes long-term care and

the professions that provide it (Neal, 2001). Moreover, there is a low level of awareness by physicians of the complexities of long-term care and studies have suggested that further education and outreach about home care is needed in order to better streamline information throughout the healthcare industry (Neal, 2001).

Finally, the 2004 study, "Nursing Aides, Home Health Aides, and Related Health Care Occupations – National and Local Workforce Shortages and Associated Data Needs," has concluded that better quality workforce data could considerably improve policy planning (National Center for Health Workforce Analysis, 2004). This study notes that the data limitations largely revolve around inconsistency of definitions and excessively broad categorization and recommends new standards for direct care workforce terminology such as:

- Reorganizing the current occupation categories of workers based on tasks, roles and functions and not the settings they work.
- Establishing standard definitions for workforce terms like turnover rates, vacancy rates, and recruiting yield.
- Incorporating new definitions into all federal data systems.
- Encouraging state agencies to adopt the terminology and definitions in state and local data systems.

(National Center for Health Workforce Analysis 2004)

These steps to ensure more comprehensive data are understood as needed in order to most accurately assess and most effectively address the issues within the long-term care system.

The home care professions of home health aide and personal home care aides continue to struggle with turnover and workers leaving the profession due to the myriad of obstacles including low wages, few advancement opportunities and poor training opportunities, and they certainly present as occupations that could benefit from further workforce development initiatives. As a significant amount of home care professionals work independently and the work is exclusively in patient's homes, this is a disparate and unprofessionalized occupational group and efforts and initiatives would need to focus on these particular factors of long-term home care.

NURSING AIDE, ORDERLY & ATTENDANT

Nursing aides, orderlies and attendants are entry-level workers in the healthcare sector and the largest frontline workforce occupational group in this study. They are part of the healthcare support occupation cluster and often aggregated with psychiatric and home health aides in the literature. They tend to have a more general application than psychiatric aides whose focus is on behavioral health patients. Nursing aides are also typically employed in institutions and facilities versus a patient's home. These aides are charged with direct patient care and may support a range of healthcare professionals while working under the direction of some higher skilled team member. Nursing aides are primarily extenders, enabling professional staff to concentrate on tasks and activities within their primary scope of practice. Responsibilities vary by setting but include assisting patients with a range of daily activities, escorting and transporting patients, taking readings and making observations, recording and reporting what they find. Nursing aides in long term care settings and other residential facilities are often the primary care givers and forge strong relationships with patients.

Given the size of this group there are many associated job titles that can be found in the literature. A full list appears in Appendix B, but some of the more prevalent alternative job titles include unlicensed assistive personnel (UAP), certified nursing assistants (CNA), hospital attendants, patient care technicians, direct care workers and health aides (U.S. Census, 2000). There are no national professional associations for the more generalist nursing aide, but they have been extensively researched, especially under the umbrella of long-term care (LTC). As a key part of the LTC direct care workforce that also typically includes home health aides and personal and home care aides, nursing aides are a well-documented frontline group.

There were over 1,375,000 employed nursing aides in 2002, according to data from the Bureau of Labor Statistics. Similar to medical assistants, this figure may be heavily understated due to the high number of part-time workers in this role. Nursing aides represent almost 30% of the total frontline population under study. Geographic

distribution of employed nursing aides is consistent across most of the U.S. except for notable spikes in parts of the East Coast and in the Midwest region comprised of Kansas, Missouri, Iowa and Nebraska. The lowest per capita employment was found in the Far West. As part of the larger aide family, the workforce is reportedly 90% female. Its ethnic profile includes more minorities than some higher skilled healthcare occupations with almost 35% African-Americans and 12% Hispanic/Latino. The average age of direct care workers in nursing homes is estimated at 37 (General Accounting Office, 2001). Bureau of Labor Statistics educational attainment statistics for nursing, psychiatric and home health aides show that almost 63% have a high school diploma or less and over 93% have less than a bachelor's degree. While there are vocational and technical college programs available, most nursing aide training is informal and on-the-job. Nursing facilities are more likely to require participation in a formal on-site training program and then certification and State registration. The Certified Nursing Assistant (CNA) designation is typically overseen by a state Department of Health and is the most common and widely recognized nursing aide label.

Promotional opportunities within the role are very limited. Some find that specializing in an area of care or crossing over to other settings and types of aide work is possible, but true advancement typically requires more education or formal training. Career ladders have traditionally been very short, but more and more employers and unions are viewing the aide population as a potential pool for up-skilling initiatives. These program help by facilitating the job transition with paid training and guaranteed positions and by making career progress a more viable option for these workers. Occupations within reach due to educational requirements of a year or less include: surgical technician, licensed practical nurse, EEG technologist and respiratory therapy technician, and dietetic technician (Work-at-Home.org, 2002)

The 2003 median annual wage for nursing aides was $20,800 (BLS, 2003), below the study group weighted average of $23,422 and the fourth lowest in the sample. The top 10% of the employed group earned almost $29,000. Short-term gains from 2002 to 2003 were moderate at 4%. Geographic variation of median annual wage is moderate with low

points in the South and the highest wage levels on both the East and West coasts. Many aides are only employed part-time by one or more employers and typically do not have access to fringe benefits. By some estimates, over 25% of CNAs in nursing homes had no health insurance, compared to 16% of all U.S. workers (General Accounting Office, 2001). Those employed in large hospitals and nursing facilities are more likely to have some medical, vacation and pension benefits available but they may have to make significant premium contributions. This enhanced access may be fueled in part by the increasing unionization of facility-based service worker categories. A significant majority (70%) of the nursing aide workforce is employed in institutions, with 44% employed by nursing care facilities (BLS, 2003). The job outlook for nursing aide employment is strong with a 25% increase due to growth projected by the Bureau of Labor Statistics from 2002 to 2012. Much of this growth is due to the aging population and the resulting increased need for long-term care services. The pressures from managed care to move patients into lower acuity settings will also increase the needs of nursing facilities. The Bureau of Labor Statistics also projects an additional 180,000 job openings due to net replacement needs from retirement and workers moving to other occupations. Some of this is clearly from the high turnover that is often cited for nursing aides. The U.S. GAO reported in 2001, "retention of nurse aides is a significant problem for many providers, with some studies reporting annual turnover rates for aides working in nursing homes approaching 100%." A key question is where these workers going to come from to fill the openings. Facilities already report growing levels of vacancies and the recent years of strong economic conditions has seen candidates diverting to higher paying, less demanding roles. The assumption that there was an endless supply of low-income women who would take these roles is now challenged and some realize that these caregivers were taken for granted (Dawson et al 2005).

Nursing aides often work irregular hours and are asked to perform unpleasant duties. They are often denied respect and are generally not well represented within the care continuum. They are subject to injuries from lifting and moving patients and possible exposure to infection. The role is rooted in helping others and some workers discover a true calling to the work. Others come to it as an easily obtained entry-level job and if

they can't find inspiration from something, are more likely to move on if conditions are challenging or a more attractive opportunity presents itself. Some cite the critical window of the on-boarding period and the need to give these workers a "good start" though orientation and training so they really try the role versus bolting in the first few days or weeks. (Pennsylvania Intra-Governmental Council on Long Term Care, 2001). Others point to the lack of ongoing training provided to workers at this level, noting that is it usually limited to regulatory driven topics and viewed more as a "check the box" need versus something that is critical to the worker's ability to contribute and to overall quality of patient care. While nursing aide scope of practice has its limitations, giving these workers additional responsibilities and the autonomy to carry them out might encourage them to remain in their jobs and serve as a viable recruitment tool (Stone & Wiener, 2001).

Nursing aides make up a significant percentage of the frontline workforce. They are vital members of the direct care continuum, especially in the LTC sector where a great deal of effort has been devoted to enumerating the workforce and identifying key challenges. Many of these are already familiar to RWJF and form part of the impetus driving existing demonstration programs such as Better Jobs, Better Care. Less is written about the 26% of nursing aides employed in the acute care setting but many of the core issues of low wages, minimal training and limited advancement are present there as well. Further investigation of this component of the nursing aide occupational group and thinking around how to extend efforts out of the long-term care sector might be an important next step.

PUBLIC HEALTH DELIVERY

HEALTH EDUCATOR

Health educators are the third smallest occupational group in this study, representing less than 1% of the total employed frontline workforce in the sample. This role has deep roots in the public health infrastructure as well as community health delivery. The primary goal of health educators is to promote good health through knowledge dissemination and behavior modification. Health educators plan and design programs, conduct studies and monitor performance outcomes related to healthy lifestyles. They focus both on the needs of the individual and the community, often serving as liaisons and coordinating efforts between public agencies and healthcare providers. Health educators collaborate with other allied health and human services roles to accomplish this, including registered nurses, counselors, social and human service assistants, dietitians and nutritionists. Strong communication, investigative and analytical skills are all critical to this role. As with many healthcare roles that work with increasingly large amounts of data, the need for strong information technology skills is also on the rise.

Health educators are sometimes also known as public health educators or specialists. They have two strong associations dedicated to the occupation: the American Association of Health Educators (AAHE) and the Society of Public Health Education (SOPHE). Both are strong advocates for enhancing visibility and professionalism within the role through scientific research, career development and raising standards for educational preparation and certification. They are also jointly involved in accreditation of baccalaureate programs in community health education.

The Bureau of Labor Statistics reported 45,000 employed health educators in 2002. The literature makes reference to an unspecific number of paraprofessionals that also contribute to health education efforts as part of their primary roles in related occupations in the health and human services sectors. These lay workers may receive some on-the-job training to perform limited health education tasks, but do not have the educational background or desire to function as full blown health educators (AAHE, 2004). The BLS

does not report demographic data for this occupational group but using data for all community health and human services specialists as a reasonable proxy, we estimate a predominantly female (almost 90%) and White (60%) workforce, with large segments of African-American (27%) and Hispanic/Latino (11%) workers. This ethnic profile is a better match to the overall U.S. population in terms of diversity than most of the other frontline roles under study. They average age of health educator workforce was not available but the average age of the total public health workforce, of which these workers are a key element, is estimated at 47, indicating a looming retirement problem (Mahan & Malecki, 2004). Over 80% of employed health educators have some college preparation and over half have bachelor's degrees. The clear trend in the literature is toward a master's level preparation as the standard and BLS now recognizes that as the most significant level of preparation. Some enter from the nursing, medicine, biology or social work fields while others prepare directly as part of post-secondary programs in health education or promotion. Over 250 universities and colleges offer some form of related educational program ranging from baccalaureate to doctorate (AAHE, 2004). There is no state licensure requirement, but voluntary certification is available from the National Commission for health Education Credentialing (www.nchec.org) after completion of at least a bachelor's degree and passing a national exam (AAHE, 2005). Additional training or formal education (master's level and higher) is often required for advancement to managerial, research or instructor roles.

The median annual wage in 2003 as reported by the BLS was $38,100. This was a 5.1% increase over the 2002 median wage, one of the most significant jumps in short term wage for this sample group. There is wide variation in pay within the occupation, as the top 10% of health educators earn over $66,000 and the mean annual salary is $75,000 for health educators employed by the Federal government. By contrast, the regional variation of wage levels was fairly stable over the U.S. with a slight spike in the Atlantic Coast states. Per capita distribution of employed health educators was also fairly even except for a notable spike in the Pacific Northwest. Most full time health educators receive health benefits (Minnesota Department of Education, 2004). Just over a quarter of health educators are employed by State and Local government agencies. Another 20%

are employed in hospitals and 12% in individual and family services agencies. Almost 40% are spread over other employer types including schools, large corporations and the Federal government (BLS, 2003). Health educators tend to work in office settings with regular hours, although some travel may be needed as part of working with the community.

This occupational group is noted in the literature for persistent shortages and cited as a top priority within the public health infrastructure (NACCHO, 2004; University of Washington Northwest Center for Public Health Practice, 2002 and Missouri Department of Public Health, 2004). There is pressure due to burnout and budget reductions that have cut public health staffing. There are also disparities in access to health education based on the size of the community. sixty-two percent (62%) of the largest public health agencies in Missouri have health educators, but only 30% of agencies that serve populations of 20,000 or fewer have a health educator on staff (Missouri Department of Public Health, 2004). Compounding the impact from worker shortages on service availability and worker quality of life, health educators are also expected to have employment grow faster than average with an increase of 22% between 2002 and 2012. This translates to approximately 9,000 new health educators needed due to growth but that figure does not include an additional 8,000 health educators projected to be needed due to the permanent separation (retirement, leaving the profession, etc) of the existing workforce (BLS, 2003). This high rate of projected permanent separation confirms that the average age of health educators is probably in the upper 40's-early 50's range. The national public health associations all echo the need to begin to deal with their impending retirement burden through cross training, up-skilling and finding more ways to recruit into the associated professions, including health educators (Mahan & Malecki, 2004).

There is current proposed legislation to increase Federal appropriations to promote improved school health education. If these are successful, there might be a further short-term crunch for health educators. Existing health educators report that they feel they need more training and development to correct a mismatch with emerging needs (Gebbie 2001). Training areas they mentioned include coalition building, business management

and finance, strategic planning and cultural competency. The leadership of nine professional health education organizations convened in March 2002 and established key strategic priorities including studying the diversity of the health educator workforce, promoting career ladders, establishing standards for entry to the profession and requiring certification (Coalition of National Health Education Organizations, 2003).

Health educators are an essential component of the public health and community health delivery systems. They also play vital roles in acute care and the educational system. The momentum in the profession seems to be toward increased standards and entry requirements and a narrowing of the definition of a true health educator. This may result in higher wages and greater visibility for those dedicated to the profession but may also decrease visibility and needed attention on paraprofessionals and those without advanced degrees. Further study may yield additional information on the lower skilled worker component and may help assess if there is a need to improve their situations. As this data was not available from our secondary research methods, it will likely require design and implementation of different data collection methods and potentially collaboration with one or more of the key national associations focused on health education.

OCCUPATIONAL HEALTH and SAFETY SPECIALIST & TECHNICIAN

Occupational health and safety specialists are another smaller sized occupational group, representing less than 1% of the totaled employed frontline workforce under study. For the purposes of our research, we have generally also included the technician data as part of our quantitative findings. There is very little difference in the roles beyond breadth of experience and the complexity of tasks they undertake. Typically, technicians are working under the supervision of specialists, assisting them in the core functions of the role. Together, these professionals are responsible for helping to ensure safe conditions primarily for workers but also for consumers, patrons of services and the general public. As such, they are an important part of the public health workforce.

Workers in this occupation typically analyze and evaluate different environments to assess potential hazards and then create programs to mitigate any threats. Generally, there are on-site employees designated to be in charge of the environment in question and they are responsible for implementing those programs while the occupational health and safety specialists and technicians monitor progress. There can be a regulatory enforcement element to this role and a predictive analytical function. These workers may be involved with a workplace in a routine, scheduled manner or be part of the response team on a specific incident.

This occupational group encompasses a broad array of job titles with a diverse range of actual job responsibilities. Some of these vary by industry and setting, others by education and expertise and there is considerable overlap with occupations such as agricultural, fire and construction inspectors, as well as financial examiners and police detectives. Some of the more common job titles include inspector et al, industrial hygienist, environment health technologist, environmental protection officer and public health service officer. Of these, the industrial hygienist is the most distinct with a separate track of certifications and its own professional associations. This narrow segment of the group tends to have a higher standard of education and focuses primarily on health effects in the workplace from noise and chemicals (American Board Industrial

Hygiene, 2005). The BLS does not report demographic data on sex and racial/ethnic distribution for this occupational group. Data from the Board of Certified Safety Professionals (BCSP) reveals that traditionally the profession has been male dominated although this is changing significantly. Regional variation analysis shows that the fewest employees per capita are in the Southeast and the Far West with the highest concentration in the Pacific Northwest.

There are an estimated 41,000 employed occupational health and safety specialists and technicians in the U.S. (BLS, 2002), the second smallest group in this study after physical therapist aides. A bachelor's degree is the most common preparation and a minimum requirement for jobs with the Federal government. There is a growing trend toward advanced degrees (Brauer, 2004). While some come to the profession with only related work experience, almost 75% of those employed between the ages of 25 and 44 have a bachelor's degree or higher, less than 10% have only a high school level education. There is often a significant fieldwork component to any preparatory program, whether formalized or conducted by an employer in an on-the-job format. Initial training areas include reviews of relevant laws, regulations and policies and on inspection and analytical techniques. There is also a required body of knowledge specific to the industry or workplace environment of interest to each employer.

After completion of the initial training and then throughout any career progression, there appear to be a myriad of available voluntary registrations and certifications. Some are tied to level of education and others are based on an area of specialization. Requirements for each designation vary, as does the sponsoring body, with some being from established professional boards and others by private insurance companies and training firms (Adams et al 2004). It appears that some of these designations are overlapping and potentially competitive which could be confusing for both applicants and employers trying to decipher the value and utility of each. Many employers, including the government agencies, have career ladders for this occupational group so promotional opportunities are available. Specialization is a key route to advancement as is movement

into management roles. Research and instructor roles are viable alternatives for those with appropriate educational backgrounds.

The median annual salary for occupational health and safety specialists and technicians is on the high end of the sample at $48,300, putting it at the top of the frontline workforce groups studied. Those in the highest 10% earned over $70,000 annually. The profession also enjoys strong median annual wage gains, increasing 5% between 2002 and 2003 (BLS, 2003). This occupational group is typically employed full time and has good access to fringe benefits. The majority is employed by government agencies (37%), including the Occupational Safety and Health Administration (OSHA), a key employer whose workers enforce Department of Labor regulations. Others work in hospitals (10%) or for a variety of private firms in manufacturing, education, consulting, mining and research.

While working conditions vary based on the employer and the types of workplace settings involved, most occupational health and safety specialists and technicians face extensive fieldwork and may commonly travel from home. They are necessarily exposed to substances, dangerous situations they are investigating, and also must deal with potentially combative business owners and employees that do not always understand or appreciate their services. On the positive side, the Board of Certified Safety Professionals reported in 2000 that over 90% of its members surveyed cite high career satisfaction.

The job growth outlook for occupational health and safety specialists and technicians is average with a projected employment increase due to growth of only 13.2% between 2002 and 2012 (BLS, 2003). This reflects a struggle between the need for more safety professions to deal with the ever-growing complexity of the workplace, a trend toward self-enforcement and less government involvement in the workings of private industry. This can be a highly politicized issue so is likely to swing with presidential and congressional elections over time.

While we found no references in the literature to shortages or high rates of vacancy for this occupation, there are mentions of layoffs by manufacturing companies due to downsizing and outsourcing of their safety personnel (Adams et al 2004). Other issues in the literature include the need for improved in-house training for occupational health and safety specialists and technicians as well as certification support (General Accounting Office, 2002). There is also a recognized need to do a better job of tracking individuals' skills and needs in order to have the most efficient deployment of personnel and effective professional development initiatives. This may also help untangle the maze of certifications and registration opportunities discussed earlier.

A recent trend identified by the BCSP involves shifting occupational health and safety specialists and technicians from being focused on identification and correction of hazards to going deeper into the entities they work with and helping empower leadership to change their culture and value operating safely (Brauer, 2004). This evolution would require new and different skills including the ability to interact at more senior levels, link business metrics to safety outcomes and train others. Beyond this trend, there is also a growing awareness that workers in this profession need additional training in dealing with hostile encounters with both people and animals (California Department of Health, 2001).

Overall, the occupational health and safety specialists and technicians group is small but well documented. It appears to have multiple agencies and professional associations dedicated to educational preparation and career advancement. Its workers enjoy a reasonably high wage level along with access to fringe benefits and promotional opportunities. It has challenges around increasing the number of women it its ranks and some clear occupational hazards due to the nature of the work. It may also face pressures from changes in the political and regulatory environment over time and in the cost cutting initiatives of private industry employers. RWJF will need to consider whether given the size of this group and their advantages, if any of these challenges fall in the realm of issues they plan to focus on with their strategic workforce initiatives.

MEDICAL and PUBLIC HEALTH SOCIAL WORKER

Medical and public health social workers provide individuals and families with psychosocial support to cope with chronic, acute, or terminal illnesses. They advise family caregivers, counsel patients, and arrange at-home services for discharged patients. The national demographic data available represents information about the collective field of social work and does not disaggregate into the distinct social work occupations.

In 2002, there were approximately 107,000 medical and public health social workers employed in the U.S. The median wage of $39,200 for the occupation is the second highest of all the occupational groups profiled here. In 2002, the data reflects that that profession of social work as a whole was 77.7% female, and just over 40% minority status, 20% of which are Black/African American (BLS, 2002). The majority of social workers have a bachelor's degree in social work or a related field, however a master's degree is a standard requirement in the field, and required particularly for clinical practice. In a national study conducted by the National Association for Social Workers (NASW), their preliminary findings reflect that 80% of the social worker respondents held a master's degree in social work, and only 12% reported a bachelor's degree as their highest attained social work degree (NASW, 2005). This same report noted that nearly 62% of the social work profession is over 45 years of age and a disproportionate share of social workers will retire in the next several years. A total of 13% of current social workers plan on leaving their current positions for retirement and other reasons (NASW, 2005). Beyond educational requirements, all states have varying licensing, certification, and registration requirements regarding social work practice and the use of professional titles. The Academy of Certified Social Workers (ACSW) and the Qualified Clinical Social Workers (QCSW) offer credentials based on professional experience.

The category of medical and public health social worker is fairly broad and covers both social workers working in clinical and hospital settings assisting patients dealing with illnesses and social workers working in more community-based settings promoting public health and coordinating outreach efforts on a community-wide level (U.S. Department of Health and Human Services, 1999). Therefore, this classification of social workers is

employed in a variety of settings ranging from hospitals, health facilities, and local, state, and federal government agencies. Among this group of social workers, 20% practice in hospitals, 12% in medical clinics, others work in hospices, nursing homes and health maintenance organizations (NASW www.naswdc.org). As a whole however, the majority (96%) of medical and public health social workers work in the private or public sector rather than private practice (NASW, 2005). As this classification comprises a disparate occupation group both in terms of duties and population served and settings that care is provided, there is not a substantial amount of data indicting particular turnover rates or shortage issues specific to this subset of social workers.

Information on the public health workforce as a whole indicate that there is a rapidly aging workforce with an average age across occupations of 47 years of age, public health workforce retirement rates as high as 45% over the next five years, current vacancy rates up to 20% in some states and public health turnover rates of up to 14% in some parts of the country (Association of State and Territorial Health Officials, 2004). The social work labor force is materially older than most professions, with nearly 30% of social workers over the age of 55, and relatively few social workers (17%) under the age of 35, which indicates a lack of sustainable workforce to balance retirement and turnover. Social workers are reporting changes in the practice of social work in the past couple of years, particularly noting an increase in paperwork and caseloads, severity of client problems, etc. which continues to contribute to burnout and individuals leaving the profession (NASW, 2005). Further issues facing social workers will be outlined below in the other subsets of social work profiles included in this report.

As discussed in this section, the field of social work faces significant challenges. Although the classification "social work" encompasses a wide breadth of occupations and settings of care, since there is not a standardized definition that is used by federal agencies that collect and analyze labor force information "there are not data sources to reliably gauge the sufficiency of the current workforce or to project future needs for the profession" (NASW, 2005; p.3). The majority of data on licensed social workers are of individuals with advanced degrees (MSW) and more research would be needed to

examine social workers with lower educational levels if that is a particularly salient criteria for RWJF frontline workforce initiatives.

COMMUNITY, SOCIAL SERVICE DELIVERY

SOCIAL AND HUMAN SERVICES ASSISTANT

Social and human services assistants are part of the community and social services specialists cluster. This is a broad paraprofessional occupational group that supports professionals from a variety of fields including psychology, social work, nursing and rehabilitation. Their contact with patients and clients can also vary greatly depending on the employment setting and their specific training and duties that encompass a wide range of administrative and customer service tasks. They are often deployed to extend the productivity of the professionals they support and to help connect clients with services both internal and external to their home organization. The primary mission of these workers is to maximize the ability of the client to function and realize the goals driving their human service needs. Given their backgrounds and personal histories, many act as important linkages to the population being served and offer valuable contributions as "information brokers" and "connectors" in a manner that the professional staff cannot (Ro et al, 2003). They do this through some combination of the intake of information, needs assessment, arrangement of services, assistance with forms and informational needs, training sessions, and monitoring of progress.

Social and human services assistants may serve individual clients or focus on groups and they can become close allies and partners of both professional caregivers and the clients themselves. Some duties may overlap with those of personal and home care aides but they are not their primary activities. Necessary core skills include clerical, interpersonal, problem solving, multi-tasking and data management (Minnesota Department of Education, 2004). Through employment of these skills, they can have a significant impact in helping programs be more effective and save money (Ro et al, 2003) through improving access, increasing utilization and enhancing quality (Ballester, 2005). Social and human services assistants is a generic term for a large set of titles that includes community health worker, community aide, promotores, human services worker, case management aide, outreach worker, family services aide and social services worker (U.S. Census, 2000).

The Bureau of Labor Statistics data indicate that there were over 305,000 employed social and human services assistants in 2002. This puts them in the top five largest occupational groups in this study. Many of these workers are employed on a part-time basis, so this employment figure may be understated. This figure also excludes the substantial community health volunteer contingent whose contributions would place them in this category. Geographic distribution reveals a stronger concentration of employed social and human services assistants on the East Coast versus the West Coast and the South. Specific demographic data for social and human services assistants is not available from the Bureau of Labor Statistics, but the data for miscellaneous community and social service specialists indicate the occupation is predominantly female (69%) and White (60%). They also report a significant African American contingent (27%). The Bureau of Labor Statistics also reports that over 60% of employed social and human services assistants have at least a bachelor's degree, a figure that seems high compared to healthcare support roles and is probably due to the wide range of workers included in this category.

Social and human services assistants enter the field through a myriad of routes. Some are entering the job market for the first time or coming from welfare and have little or no experience. Others come with relevant work experience, a certificate or associate degree in one of the social services or even a bachelor's degree in social work or psychology. Where the path leads an applicant usually depends on employer requirements and greatly influences the wage and level of autonomy in the position. Those entrants with less experience and preparation are typically trained on-the-job by either peers or supervisors, but most employers provide incoming employees with some sort of orientation or in-service to the job, especially if it involves direct client contact. Training and selection of these workers is seen as key to success (Ro et al, 2003). Credentialing is a challenge given the lack of standard preparation and role clarity. To date, only the state of Texas mandates credentialing of community health workers (Family Health Foundation, 2005).

Advancement opportunities are as varied as the roles and titles for this occupational group and are linked to elements including the size and scope of employer, years of experience and training, and attained formal education. Possible promotion paths include supervisory and management roles, positions in larger organizations and specialization. Some social and human services assistants end up moving into the ranks of the professionals they support but this usually requires extensive additional formal education.

The median annual salary for employed social and human services assistants in 2003 was $24,000 with the top 10% earning $39,000 (BLS, 2003). Short-term salary gains were moderate at a 2.7% increase over 2002 median wages. Regional wage variation was also moderate with the lowest median wages found in the region comprised of Montana, North Dakota, South Dakota, Wyoming, Colorado, and Utah. The two regions reporting the highest median wage were on the coasts (New York, New Jersey and California, Arizona, Nevada Hawaii). Most social and human services assistants are employed by State and Local government agencies (29%) with large segments also in individual and family service agencies (18%) and residential mental health facilities (11%). Unlike other occupations in the community and social services category, these workers are rarely self-employed.

The job outlook for this role is very strong with a 49% increase in openings due to growth projected by the Bureau of Labor Statistics for 2012. An additional 50,000 job openings due to people retiring or advancing into new professions is also forecasted, raising the total new job openings in this role to over 200,000. Fueling this growth is the aging population, the growing demand for human and social services and increases in the practice of leveraging responsibilities from the professional ranks of social workers and psychologists to these lower cost employees. Some states, such as Massachusetts, can cite a long history of developing and deploying community health workers. They trace their program back to 1965 and the Economic Opportunity Act of 1964 (Ballester, 2005). Today, there is a growing awareness that these workers are very effective at linking different communities and agencies and that they can be powerful change agents (Keane et al, 2004). Some states are promoting the use of these workers in programs such as

Medicaid, WIC and Food Stamps as a way to cost effectively strengthen outreach and educational activities. In 2001, Texas mandated the use of certified community health workers in programs such as Medicaid (Family Health Foundation, 2005). Growth is expected to be faster in the private agencies versus public due to funding levels and government policies that may promote outsourcing of services to private entities.

This work can be emotionally draining and offer few tangible rewards, thus turnover is estimated to be high, especially for those without formal academic preparation. Some studies cite annual attrition rates as high as 77% (Bhattacharyya et al, 2001). Many in the role are part time and have no access to fringe benefits. The 1998 National Community Health Advisor Study funded by the Annie E. Casey Foundation found that over 50 percent of community health workers do not have access to health benefits and half of the surveyed workers also reported having no basic sick leave or vacation benefits. Job security is another major concern due to the patchwork nature of funding for many agencies (Ro et al., 2003). There is a lack of clear role definition or career progression in this very broad occupational group, complicating efforts to define scope, increase visibility and introduce standardized entry routes and career ladder initiatives.

A few states, including Texas and Colorado, offer some standardized instruction and certification programs for this role but funding for these can be intermittent and more progress is needed to formalize these types of initiatives (Ro et al., 2003). Massachusetts has been working since 1997 to gather information and create networks to better understand and support their community health workers. They have just released the results of a worker and supervisor survey and are working toward development of a statewide CHW network and clear policies for those operating within the Department of Public Health (Ballester, 2005). Role clarity and more standardization around core competencies and job preparation might also help diminish some of the ongoing issues related to scope of practice that can arise between the professional staff and these workers (Family Health Foundation, 2005). More definition of roles and more training of professional staff are also needed so they can more effectively collaborate and supervise these critical workers.

Social and human services assistants are a large group of broadly defined workers that would benefit from both more study and strategic workforce investment. They are a high growth occupational group with a clear and valuable contribution to make. They also represent a key job entry point into the healthcare and human services sectors for a range of candidates from the unskilled to those with academic preparation or other formal training. Their challenges around role clarity and lack of career progression support would seem to fit well with the overall values and goals driving the need to improve the conditions and enhance opportunities for the frontline workforce.

CHILD, FAMILY and SCHOOL SOCIAL WORKER

Child, family and school social workers provide social services and assistance to children and families. They counsel on a range of issues including mental health, unemployment, substance abuse, physical abuse, social adjustment, childcare, and medical care. Child welfare/child protective services social workers may assist single parents, arrange adoptions, and help find foster homes for children. School social workers address teen pregnancy, truancy and misbehavior, and sometimes work with teachers to address these issues. Family social workers work with elderly citizens and families caring for elderly relatives. Child, family and school social workers cover a range of occupations and duties and the data on the professions are often found in studies about the "human services" and "youth services" workforce.

The national demographic data available represents information about the collective field of social work and does not disaggregate into the distinct social work occupations. In 2002, the data reflects that the profession of social work as a whole is 77.7% female, and just over 40% minority status, 20% of which are African-American (BLS 2004). The majority of social workers have a bachelor's degree in social work or a related field, however a master's degree is a standard requirement in the field, and required particularly for clinical practice. In a national study conducted by the National Association for Social Workers (NASW), their preliminary findings reflect that 80% of the social worker respondents hold a master's degree in social work, and only 12% reported a bachelor degree as their highest social work degree (NASW, 2005). This same report noted that nearly 62% of the social work profession are over 45 years of age and a disproportionate share of social workers will retire in the next several years; and a total of 13% of current social workers plan on leaving their current positions for retirement and other reasons (NASW, 2005). Beyond educational requirements, all states have varying licensing, certification, and registration requirements regarding social work practice and the use of professional titles. NASW, the Academy of Certified Social Workers (ACSW), and the Qualified Clinical Social Workers (QCSW) offer credentials based on professional experience.

There were 274,000 child, family, and school social workers employed in the U.S. in 2002 (BLS, 2002) and the median annual wage for child, family, and school social workers was $34,300 in 2003 (BLS, 2003). As employment is expected to increase faster than average for social workers, a variety of factors will impact the demand. An aging population will contribute to greater demand for gerontology social work practice. While school social work demand is expected to grow, the availability of state and local funding will be a major factor in determining job growth in that setting. Social work services for older adults and children are not narrowly confined to particular practice settings and the specific mix and variation of age groups that social workers routinely serve have implications for workforce training and development beyond those particular areas (NASW, 2005).

While the data for all social work occupations show high levels of burnout, lack of reward structure, large caseloads, and low salaries (Light 2003; NASW 2005), it is somewhat difficult to present a collective picture of the data about this subset of social workers in particular as they are often subsumed in other workforce classifications, such as child welfare/youth services for child social workers, or long-term care/hospice care for family social workers. However, available data indicates a high turnover rate for social workers, particularly in human services. The estimated annual turnover rate among child welfare workers employed in private child-serving agencies (e.g. group homes, residential treatment centers, and home-based counseling programs) is reported at up to 40% (Annie E. Casey Foundation, 2004). Data from a national survey of human services workers indicate that while the vast majority of workers take pride in their jobs and view helping children and families as a "very important" consideration in taking their jobs, they are overwhelmed with caseloads, and feel unappreciated, underpaid, and that their talent and achievements go unrewarded (Light, 2003). The 2003 report by the Annie E. Casey Foundation regarding the condition of the frontline human services workforce maintained that there is a lack of extensive data about the field, specifically calling for further research to provide more accurate data about:

- Motivations for joining or staying in the profession
- Job satisfaction, organizational trust, and compensation structures
- Personal work histories/intentions to stay or leave

- Workload pressures/perspectives on families and children served
- Working conditions/access to resources, information, and training
- Views of past and potential workforce reform
  (Annie E. Casey Foundation 2003)

School social workers make up only 5% of the total social worker profession (www.naswdc.org) and tend to be professionalized as their own sub-entity of social workers. Associations such as the School Social Work Association of America (SSWAA) serve to advocate and provide resources and professional development for this subset of social workers that tend to be hired by school districts and work within school and district settings.

As with the other social work professions profiled here, child, family, and school social workers comprised a highly professionalized field with advanced education. The social work profession as a whole faces much of its turnover due to burnout from excessive workloads and studies such as the National Study of Licensed Social Workers conducted by the NASW will be able to provide further insights on the challenges and outlook of the social work profession as a whole. However, due to the advanced educational training and moderate to higher salaries relative to the other occupations profiled here, it may not qualify as an occupation that fits RWJF's vision of the particular frontline workforce that will benefit most from the envisioned training and workforce development initiatives. That said, further studies and observations from the emerging research from NASW in particular would yield more nuanced insights into the particular strategies needed to address the needs of the social worker profession.

BEHAVIORAL HEALTH DELIVERY

MENTAL HEALTH COUNSELOR

Mental health counselors are one of two sub-groups of counselors included in this frontline workforce study. Their mission is to assist people with a wide range of decisions and problems with a specific focus on mental and emotional disorders. They rely on interviews, observation and testing to determine how best to help someone. Other categories of counselors include educational, vocational and school, rehabilitation, marriage and family therapists and the second group included in this study, substance abuse and behavioral disorder. Mental health counselors can be viewed as generalists as they deal with a wide variety of issues, some of which overlap with other specialty counseling areas. Counselors are a core part of the behavioral health continuum and work with other key mental health professionals including psychiatrists, psychologists, social workers, psychiatric nurses and paraprofessionals including psychiatric technicians and aides. In the therapy hierarchy, counselors are typically one rung below psychologists. Certified counselors are generally master's prepared while psychologists are licensed and typically have earned doctoral degrees.

There are a growing number of self-employed counselors whose demographics and educational profiles are not captured by the available data sources. For this study, given the focus on frontline workers with limited autonomy and those found in employment settings, this was not determined to be a major issue. Demographic data on those with less than a master's degree and mental health paraprofessionals is not as readily available but attempts have been made to include definitional input on this segment of the occupational group.

The total employed counseling workforce in 2002 was over 526,000 and mental health counselors represented 85,000 or 16% of the total counseling workforce (BLS, 2003). Geographic distribution of employed mental health counselors appears to be very uneven. For example, within the East coast you have very low reported per capita employment in one region (New York and New Jersey) and the highest concentration of per capita

employment over the rest of the area. It is not clear if this is due to varying numbers of self employed counselors, differences in how counselors classify themselves between occupational groups or if it reflects true differences in the number of mental health counselors in those areas. There is a particular issue of behavioral health coverage in rural areas, with over 60% of rural Americans living in designated mental health professional shortage areas (Western Interstate Commission for Higher Education Mental Health Program 2004). The available national demographic data represents information about the collective field of counseling and does not disaggregate into the distinct counselor sub-groups. In 2002, the data reflects that counseling as a whole is 67% female, and 35% minority status, 22% of which are African-American and 10% Hispanic/Latino (BLS, 2004). An average age for employed counselors was not available but the National Board of Certified Counselors (NBCC) reported in 2000 that 48% of National Certified Counselors (NCCs) were 55 or older (Manderscheid et al 2001).

The most common form of academic preparation for counselors is a master's degree and a required number of hours of supervised clinical experience. This is the minimum required for most forms of certification and licensure. The core curriculum for general counseling includes human growth and development, relationships, assessment, research and program evaluation and social and cultural diversity. Almost 70% of employed counselors have a bachelor's degree or higher educational attainment. The Council for Accreditation of Counseling and related Educational Programs (CACREP) has accredited over 188 programs in counselor education in the U. S., 47 of which are at the doctoral level (American Counseling Association, 2005). Alternative programs exist but may not be as readily recognized by doctoral programs and state regulatory boards. There has been recent interest by educational institutions, students and accrediting bodies around the development of distance learning programs in this area but at this time, the CACREP has not yet accredited any online degree programs. There are some bachelor's prepared individuals in the occupational group but employers typically view them as only qualified to be counseling aides or social service workers. These workers will usually have completed a series of counseling courses beyond their bachelor's degree.

All but two states, California and Nevada, require some form of licensure, certification or registration to practice counseling. Hawaii, Minnesota and New York recently added licensure requirements and still have some Board rulings pending (NBCC, 2005). Most designations are tied to completing a master's program and a clinical experience, as well as passing a state exam and then meeting continuing education requirements. It is a widely varying landscape and those entering the profession or moving between either locations or counseling specialty areas should thoroughly review the applicable State requirements. A voluntary national certification is also available through the NBCC and in some states, may be substituted for the state process. Many professional associations offer specialty certifications that help counselors shape their professional identities and enhance employment and self-employment opportunities.

Individuals in the counseling profession have a greater ability to direct their own careers than many other groups in this study. Advancement in mental health counseling comes mainly though specialization and work experience. One can choose to work in larger settings with more responsibility or move into management and supervisory roles. Some mental health counselors migrate to private practice or into research, consulting or education. Counseling aides typically need to obtain their advanced degree in order to progress to levels where they can become certified and take on full counseling responsibilities.

Wage data for counselors can be misleading as it does not include income generated by the self-employed, who tend to be among the highest earners. The median annual salary in 2003 for employed mental health counselors was $32,100, a 7.2% increase over the 2002 median. The top 10% of employed mental health counselors earned almost $55,000 annually. There was no significant geographic wage variation for this occupational group. Employment settings of note include outpatient care centers (20%), individual and family services agencies (17%) and local government agencies (13%) (BLS, 2003). The outlook for mental health counselors is positive with projected employment by 2012 of over 107,000, an increase due to growth from 2002 of almost 27%. Some of this growth is driven by the aging U.S. population and 3rd party

reimbursement policies favoring lower cost alternatives to psychologists and psychiatrists that benefit this occupational group. Depending on the employer type, counselors can be in office settings with regular hours or in other outpatient settings where they may be on call or work irregular and long hours.

The overall mental health profession is evolving as it considers changes in educational preparation, multi-discipline treatment approaches, cultural competency issues and ties to keep pace with evolving regulatory and reimbursement policies. The President's New Freedom Commission on Mental Health (2003) identified goals and recommendations for the mental health delivery system including developing ways to deal with a fragmented services at the state level, better serving minority populations and those in correctional institutions, resolving the workforce imbalances and enhancing access to care in rural areas (Hogan et al, 2003). The Commission heard testimony in 2003 that there is a shortage of providers and that the current educational models are not keeping pace with practice and may be more focused on outdated teaching methods and not emphasizing evidenced based treatment practices. The Annapolis Coalition commented in May 2003 on the Commission's report citing a "training chasm" where the emphasis is still on treatment versus recovery and single versus multi-discipline. They also reported the sector is also lacking a full appreciation for cultural literacy and the multi-cultural complexities of mental health diagnosis and treatment. (Hoges & Morris, 2003).

Shortages in overall mental health professionals are mentioned throughout the literature and data suggests that there are more employment openings than graduates on an annual basis (BLS, 2004). This is considered a helping profession and the workers' desire to continue to do so can waver as high turnover in the mental health workforce is well documented. Some estimate that the entire U.S. mental health workforce turns over every five to seven years (Blankertz & Robinson, 1997). In a 1993 study, the mental health staff surveyed highly ranked stress, burnout, low wages and limited advancement as reasons they would leave their jobs (Blankertz & Robinson, 1997). A 2001 workforce survey of the State Mental Health Agencies (Schacht, 2003) revealed that 44 states reported experiences shortages of mental health staff including bachelor's level roles

such as counseling aides or direct care technicians. It is estimated that these direct care personnel comprise nearly 40% of active client care staff in mental health organizations and more than 60% of client care staff in state and county psychiatric hospitals (Manderscheid et al, 2001). This group is recognized as having the most contact with patients suffering serious disorders but being given the least training in clinical interventions (Hoges & Morris, 2003). Improvement efforts are hampered by the high turnover rates (Styron et al, 2004).

Mental health counselors have some hurdles to overcome as part of the total counseling occupational group and the behavioral health workforce. High turnover, an aging workforce and challenges around training, reimbursement and cultural competencies are all present. Also, while their major challenges seem to have been identified, there is a lack of readily available demographic data at the paraprofessional level of both counseling and the total behavioral health workforce, complicating efforts to try and determine focus and create change. Mental health counselors at the standard level of educational preparation would seem to have more options and some ability to control their careers. They might benefit from improved working conditions and training to enable them to face the inherent challenges of being in the mental health field. Further study and evaluation focused on the paraprofessional component may be the best use of strategic resources.

SUBSTANCE ABUSE and BEHAVIORAL DISORDER COUNSELOR

Substance abuse and behavioral disorder counselors is the second of two sub-groups of counselors included in this frontline workforce study. For a more detailed look at data related to all counseling sub-groups and the overall mental health workforce, please review the narrative section on mental health counselors. This section will primarily focus on the unique aspects of substance abuse and behavioral disorder counselors. Their mission is to assist people with a wide range of decisions and problems with a specific focus on helping people with issues related to alcohol, drugs, gambling and eating disorders. They work to help patients repair their lives and relationships and counsel their families and friends who may have been affected by their behavior (Minnesota Department of Education, 2004). Alternative job titles for substance abuse and behavioral disorder counselors may or may not specify that they are certified and include addiction counselor, drug and drug abuse counselor and chemical dependency counselor (U.S. Census, 2000).

The total employed counseling workforce in 2002 was over 526,000 and substance abuse and behavioral disorder counselors represented 67,000 or 13% of the total (BLS, 2003). Geographic distribution of employed substance abuse and behavioral disorder counselor varies. It is not clear if this is due to varying numbers of self-employed counselors, differences in how counselors classify themselves between occupational groups or if it reflects true differences in the number of substance abuse and behavioral disorder counselors in those areas. The average substance abuse counselor is a 45 year-old female, seeing about 29 clients in a 50-hour work week (ATTC Networker, 2002). The majority of treatment providers are between 40 and 55 and just over half of the treatment professionals are female, although 68% of the client population is estimated to be male. Similarly, 85% of substance abuse professionals are White versus a client base that is only 56% White (Hubbard et al, 2003).

Standard educational preparation for licensed substance abuse and behavioral disorder counselors parallels that for other counseling areas, however, the literature references

associate and bachelor's degree preparation significantly more often for this occupational group. The core curriculum shares many of the same topic areas as mental health counseling but also may include theories of addiction, prevention and psychopharmacology. Clinical experience is also a key part of preparation. For this counseling sub-specialty there are even some state level certifications for addiction professionals that do not require a master's degree. For example, Florida offers three levels of Certified Addiction Professional, including two levels of Associate Professional. The initial rung requires 2,000 hours of work experience, 100 hours of direct supervision and 150 hours of education but has no formal academic degree requirement. The second level increases the hours of work experience and requires an associate degree or a high school diploma (Florida Area Health Education Centers, 2005)

Individuals in the counseling profession have a greater ability to direct their own careers than many other groups in this study. Advancement for substance abuse and behavioral disorder counselors comes mainly though specialization and work experience. One can choose to work in larger settings with more responsibility or move into management and supervisory roles. Some substance abuse and behavioral disorder counselors migrate to private practice or into research, consulting or education. Counseling aides typically need to obtain their advanced degree in order to progress to levels where they can become certified or take on full counseling responsibilities.

Wage data for counselors can be misleading as it does not include income generated by the self-employed who tend to be among the highest earners. The median annual salary in 2003 for employed substance abuse and behavioral disorder counselors was $31,500, a 4.4% increase over the 2002 median. The top 10% of employed substance abuse and behavioral disorder counselors earned almost $49,000 annually, about 13% less than the top 10% of employed mental health counselors. There was no significant geographic wage variation for this occupational group. Employment settings of note include residential mental health facilities (19%), outpatient care centers (18%), individual and family services agencies (16%) and local government agencies (11%) (BLS, 2003). The outlook for substance abuse and behavioral disorder counselors is positive with a

projected need by 2012 of over 83,000, an increase from 2002 due to growth of over 23%. Some of this growth may in response to changing state attitudes about licensing substance abuse counselors. In California, legislation is pending (as of December 2004) to license alcohol and drug abuse counselors. Demand may also increase due to emerging state laws requiring substance abuse treatments versus jail for offenders (BLS, 2004).

Compounding the high average age and the BLS projected demand for substance abuse counselors is a very high reported rate of turnover. Substance abuse and behavioral disorder counselors more often work in residential and outpatient settings where they might be on call or work irregular and long hours—this can contribute to high stress levels and burnout. Some reported turnover rate ranges from 17-33% annually (Clark, 2004) while a 2003 study on the national addiction treatment infrastructure (McLellan et al, 2003) reported an annual turnover rate as high as 50% for counselors. It also noted that 20% of the treatment programs it reviewed had no information services, email or voicemail. A regional survey of substance abuse workforce cited that nearly half of all providers reported spending 21-60% of their time on paperwork and the majority report spending less than 50% of their time counseling (Southern Coast Addiction Technology Transfer Center Network, 2003). Other workplace concerns include low salaries, large caseloads and the perception that substance abuse disorder counseling has a lower status (Addiction Technology Transfer Center 2003 and 2004), possibly due to the number of these workers with lower educational levels and previous backgrounds of substance abuse themselves (Addiction Technology Transfer Center Network, 2003 and 2004). There is also a need mentioned for more clinical supervision as supervisors are reporting they are overworked and do not have sufficient time for mentoring or overseeing subordinates' work (White, 2004). Also, 54% of treatment program directors have been in their roles less than one year (McLellan et al 2003, possibly indicating widespread leadership deficiencies. All of these issues add up to a fragile work environment that would hamper the ability to retain employees. Some of the proposed solutions include more study on the issues, enhanced training, increased supervision, financial incentives and loan forgiveness programs (Addiction Technology Transfer Center 2004).

Overall, substance abuse and behavioral disorder counselors appear to be a great candidate for strategic investment and further study. They appear to have a different educational and workplace profile from other counseling sub-groups that potentially makes them better suited to the types of program initiatives that RWJF is considering. The projected demand and high turnover for this role, coupled with its vital contribution to the behavioral health landscape would seem to place it as a high priority for action and innovation.

MENTAL HEALTH and SUBSTANCE ABUSE SOCIAL WORKER

Mental health and substance abuse social workers assess and treat individuals with mental illness or substance abuse problems. They provide services that include individual and group therapy, outreach, crisis intervention, social rehabilitation, skills training and other supportive services that help to ease individuals back into the community.

There were 95,000 mental health and substance abuse social workers employed in the U.S. in 2002 (BLS, 2002). The median annual wage for mental health and substance abuse social workers in 2003 was $33,700, which is the lowest of the three social work professions profiled in this report. The national demographic data available represents information about the collective field of social work and does not disaggregate into the distinct social work occupations. In 2002, the data reflects that that profession of social work as a whole is 77.7% female, and just over 40% minority status, 20% of which are African-American (BLS, 2002).

The majority of social workers have a bachelor's degree in social work or a related field, however a master's degree is a standard requirement in the field, and required particularly for clinical practice. In a national study conducted by the National Association for Social Workers (NASW), their preliminary findings reflect that 80% of the social worker respondents hold a master's degree in social work, and only 12% reported a bachelor's degree as their highest social work degree (NASW, 2005). This same report noted that nearly 62% of the social work profession are over 45 years of age and a disproportionate share of social workers will retire in the next several years; and a total of 13% of current social workers plan on leaving their current positions for retirement and other reasons (NASW 2005). Beyond educational requirements, all states have varying licensing, certification, and registration requirements regarding social work practice and the use of professional titles. The National Association of Social Work (NASW), Academy of Certified Social Workers (ACSW), and the Qualified Clinical Social Workers (QCSW) offer credentials based on professional experience. In California, for instance, mental health and substance abuse social workers are only licensed as clinical social

workers—LCSW (McRee et al, 2003). The state-specific licensing that California now requires actually limits the number of qualified practitioners across other states that can practice in California. Some analysts and practitioners are pushing for national standards across states to maximize the pool of potential social work employees (McRee et al, 2003).

Potential options for advancement include movement to supervisor, program manager, assistant director, or executive director positions within social service agencies or government departments, although this requires advanced degree and significant work experience. Social workers working in the mental health and substance abuse field report high levels of stress, burnout, and low salaries. In one study, the perception of limited advancement opportunities and the lack of reward structures in particular were predictive of social workers leaving the profession (Blankertz & Robinson, 1997). This same study also notes that workers with higher educational levels were more likely to be burned out and leave the profession (Blankertz & Robinson 1997). A particularly high turnover rate of mental health staff is reported in all states, with estimates that the entire US mental health workforce turns over every five to seven years (Blankertz & Robinson, 1997). The demand for substance abuse social workers is expected to grow rapidly and many employers already are reporting difficulties filling jobs. California has reported an average turnover rate of 6% and any increase in demand means that many health care facilities will rely more on other classes of workers to meet client needs (e.g. specialty nurses, health aides). Analysts have predicted that agencies will continue to restructure and hire more lower-paid workers and assistants in order to meet this demand (McRee et al, 2003). In California, the mental health care planning, financing, and service provision structures are uncoordinated, creating a "patchwork approach" to which some are seeking to move toward a demand model that identifies patient's needs to then determine the number of workers needed and the corresponding qualifications needed for the specificity of mental health care delivery (McRee et al. 2003).

The mental health and substance abuse social work also faces the need for cultural competent and age-appropriate care. There is an observed potential disconnect,

particularly in California, between the social work services offered and the needs of a population that is culturally diverse and aging (McRee et al, 2003). Although more comprehensive demographic data is needed for all of the mental health professions, the workforce does not appear to reflect the growing diversity (US Department of Health and Human Services 1999). African Americans make up less than 4% of the mental health care providers nationally and the ratio of Hispanic mental health providers relative to the Hispanic population is half the ratio for whites (white ratio is 173 per 100,000) (US Department of Health and Human Services, 2001). Moreover, making mental health and substance abuse care available in rural areas is increasingly important although recruiting to rural areas is particularly difficult due to professional isolation, lower salaries, and limited career opportunities for spouses (Kimerling, 2002).

Of the three social work professions, mental health and substance abuse social workers appear to have the lowest wage levels and some of the more salient environmental challenges, particularly regarding the patient population that they work with. As mentioned previously, the social work profession as a whole is relatively highly educated and highly professionalized and may not directly fit into RWJF's initial frontline workforce programming. Initiatives that address diversity and cultural competency may be of particular importance for further consideration with this particular social work profession.

PSYCHIATRIC AIDE

Psychiatric aides are one of two entry-level rungs in the behavioral health delivery system ladder profiled in this report. A relatively small occupational group, it is part of the healthcare support occupation cluster and often aggregated in with nursing and home health aides in the literature. They are distinct from psychiatric technicians, a member of the health diagnosing and treating practitioner cluster. These frontline personnel support a team of mental health professionals in the routine care of mentally impaired or emotionally disturbed patients. They typically assist patients with non-clinical needs and due to their high level of direct contact, can be key part of the care continuum if properly seen as such. Alternative job titles include mental health aide or assistant, psychiatric attendant or orderly and psychiatric nursing assistant (U.S. Census 2000).

As part of the larger aide family, the workforce is 90% female. Its ethnic profile includes more minorities than some higher skilled healthcare occupations with almost 35% African-Americans and 12% in the Hispanic/Latino category. Many aides are employed part-time. Unlike home health aides, there are no directly related professional associations or accrediting bodies for psychiatric aides. There were 59,000 employed psychiatric aides in 2002 according to the BLS. Almost 60% worked in some sort of hospital setting with 46% in psychiatric and substance abuse hospitals. Others worked in residential mental health facilities (8%), state and local government agencies, individual and family services agencies and outpatient care centers (BLS, 2003). There is wide variation in per capita distribution of employed psychiatric aides, potentially signaling differences in behavioral health practice patterns. For example, one Western region (California, Nevada, Arizona, Hawaii) reported only 5 psychiatric aides per 100,000 while a Midwest region (Kansas, Missouri, Iowa, Nebraska) reported 33 aides.

This role is clearly an entry portal to both the mental health delivery system and the healthcare industry in general. Peers or direct supervisors train most psychiatric aides on-the-job in formal or informal modes and the duration and content varies widely. A few states require formal training and/or physical exam for psychiatric aides. There is some

pre-entry vocational training available from technical schools and community colleges on nursing aide skills. BLS educational attainment statistics for nursing, psychiatric and home health aides show that almost 63% have only a high school diploma or less and over 93% have less than a bachelor's degree. There are no licensure requirements or certifications specific to psychiatric aides. There are more general aide certifications like the Certified Nursing Aide that workers in this occupational group might try to attain on their own or as directed by an employer.

Crossing over to other settings and types of aide work is possible but advancement typically requires more education or formal training. Career ladders have traditionally been very short, however, more and more employers are viewing the aide population as a potential pool for up-skilling initiatives. These programs are important for facilitating the job transition with paid training and guaranteed positions and making career progress a more viable option for these workers. Occupations within reach due to educational requirements of a year or less include surgical technician, licensed practical nurse, EEG technologist and respiratory therapy technician and dietetic technician (Work-at-Home.org, 2002)

Wages for this occupational group are the highest of all of the aide groups studied with an annual median of $23,110 in 2003 (BLS, 2003). This puts psychiatric aides just below the total frontline workforce study group weighted average of $23,422. The top 10% of workers made almost $35,000. Recent wage gains were minimal at less than 1% growth from 2002 to 2003 and self-employment is not a viable option for this group. Wage levels vary widely across the U.S. with peaks in New York, New Jersey and the Pacific Northwest.

Many aides are employed part-time and typically do not have access to fringe benefits, although those employed in state government and large hospitals generally have some medical, vacation and pension benefits available but they may have to make significant premium contributions. This may be fueled in part by the unionization of many hospital-based service worker categories. The Service Employees International Union (SEIU) has

made mental health workers a key focus of their recent efforts. In California, they report membership of over 10,000 mental health workers and are dedicated to fighting funding cuts, influencing staffing ratios and improving wages.

The job outlook for psychiatric aides is average with a 15% increase due to growth between 2002 and 2012. There are an additional 7,000 openings projected over that same time period due to permanent separation, indicating either a possible increased trend in retirement or, more likely, people leaving the profession for employment elsewhere. The outlook for psychiatric aides is tied to that of their key employers, which are mainly hospitals dependent on funding from government and 3rd party payers. Behavioral health insurance coverage, especially for inpatient services, is always at risk as health plans look for ways to control costs. Deinstitutionalization has been a continued trend and if it persists and hospital funding is cut further, then layoffs and unit closures are always a potential threat to job security (Work-At-Home.org 2002).

There are not many factors contributing to retain workers in this occupation beyond a true calling to work with patients in the behavioral health discipline. While they may fare better than some other aide categories, psychiatric aides are still low paid, may work long and irregular hours and face possible injury from lifting patients or from violent behavior. Respect and recognition for their efforts is not always a part of the environment and there are few entities looking to improve these conditions beyond unions.

Entry to the role is non-standardized and there are minimal avenues for establishing a more professional tone. Given these challenges, their close proximity to the patients and high potential impact on quality of care, this occupational group would seem to be a prime candidate for inclusion in future RWJF strategic workforce initiatives.

PSYCHIATRIC TECHNICIAN

Psychiatric technicians are the second of two entry-level members of the behavioral health workforce being profiled. Also known as mental health technicians, they typically work as part of a team of professionals caring for patients that are mentally ill, emotionally disturbed or developmentally disabled. The Bureau of Labor Statistics categorizes them with other health diagnosing and treating practitioner support technicians versus psychiatric aides who are part of the healthcare support occupations group. In California, one of four states that licenses psychiatric technicians, they are considered to be a nursing category parallel to licensed practical nurses and are seen as a key part of the care delivery process even though they are not independent practitioners (Hearn 2005).

Their core activities span nursing, psychiatric and personal care and they are in close contact with both patients and their families. They interview new patients, help develop treatment plans, lead group sessions, make observations and write reports. Some also work with patients teaching them basic living and working skills and even refer them to various agencies after release. There are no national professional associations specific to psychiatric technicians. Much of the available data on this occupation comes from two California based professional associations.

The Bureau of Labor Statistics reports a 2002 employed population of almost 60,000, virtually the same size occupational group as psychiatric aides. In total, the employed population of the behavioral health component of this study equals over 366,000 workers. Most psychiatric technicians work with institutionalized patients in psychiatric and substance abuse hospitals (42%) or other types of hospitals (22%). In these environments, they are often used to relieve the burden of care from registered nurses who are often in short supply and in some states subject to mandatory staffing ratios where psychiatric technicians may not be (McRee et al 2003 and Gleeson et al 1993).

The geographic variation of employed psychiatric technicians is highly volatile reflecting regional differences in their presence on care delivery teams. For example, a region in the Midwest (Kansas, Missouri, Iowa and Nebraska) has a per capita employment of 53 versus an Eastern region (New York, New Jersey) with only 8 per capita. As a point of interest, this same Midwest region also has the highest per capita employment of psychiatric aides in the U.S. Specific demographic data is not available on this occupation, but the BLS does offer data for all health diagnosing and treating practitioner support technicians. This data represents that the great majority in this category are female (82%) and White (71%), with a material segment of African-Americans (17%).

Currently, the prevalent form of preparation for psychiatric technicians is formal training via certificate and associate degree programs. This is usually in combination with an on-site clinical component. The curriculum includes topics such as anatomy, pharmacology, nursing skills and psychiatric care. There is still a large contingent of incumbent workers trained on-the-job, as evidenced by BLS attainment data showing that a third of employed psychiatric technicians aged 25-44 have only a high school education or less. There are licensure requirements in California, Colorado, Kansas and Arkansas (Minnesota Department of Education, 2004) and the regulation is typically handled by the State Board of Nursing. Advancement within the role depends on the employer but typically involves either specialization in one area such as substance abuse or by earning more responsibility with less supervision along an employer defined job ladder. In California, after a year of service at a State facility, employees can advance to Senior Psychiatric Technician and see an increase in pay (California Association of Psychiatric Technicians, 2004). Movement to other roles within mental health or other healthcare and human services disciplines generally involves more formal training and education. Programs aimed at growing the ranks of registered nurses often view psychiatric technicians as attractive candidates for up-skilling (CA Nursing Workforce Initiative, 2004).

The 2003 median annual wage as reported by the Bureau of Labor Statistics was $25,700. This is only 11% higher than the median wage for psychiatric aides, however, technicians

in the top 10% earn almost $48,000 whereas aides top out at $34,500. Wage rates in the East and West were comparable but some regions in the South reported lower median annual wage levels. There was no median wage gain from 2002 to 2003 for technicians.

There were no consistent indications of psychiatric technicians shortages in the literature except in a California Department of Mental Health study of clinical vacancies in publicly funded mental health programs (county programs and state hospitals) that revealed over 2,500 vacancies in these settings alone, with the highest vacancies reported among psychiatrists, social workers, registered nurses and psychiatric technicians (McRee et al, 2003).

On a national level, the growth outlook for this role is slower than average with the BLS projecting only a 4% increase in openings due to growth from 2002 to 2012. This may be related to the deinstitutionalizing of mental health and the challenges in obtaining reimbursement for inpatient mental health services (Work-At-Home.org, 2002). There is conflicting perspective coming from a few states where the value and demand for psychiatric technicians may be better understood. In a 1994 sunset review conducted by the Colorado Department of Regulatory Agencies, it was determined that not only should the licensure program continue, but due to the strong need for psychiatric technicians in the private sector, that the limitations on scope of practice for workers employed outside of State settings should be lifted. In California, where the local labor market analysts have consistently underestimated growth in psychiatric technician jobs in California for the last decade, current indications are that there continues to be an increasing need for more technicians (McRee et al, 2003). Their current exclusion from the minimum nurse staffing ratios in California makes them attractive as a substitute for more costly personnel in situations where they can supervise treatment.

The work environment is not free from hazards as psychiatric technicians are exposed to potentially violent patient behavior and subject to injury from lifting and other routine physical activities. They may be subject to excessive overtime and suffer from the burnout that is written about extensively in the literature on the mental health delivery

system. Some estimate that the entire U.S. mental health care workforce turns over every five to seven years (Blankertz & Robinson, 1997).

Overall, the psychiatric technician occupational group is a good candidate for additional study, both as a unique profession and as part of the behavioral health landscape that for this study includes social workers, counselors and psychiatric aides. They are not a particularly well-documented group outside of California given that state's reliance on the role and the ability to track them via the licensure mechanism. Even in California, there is a recognized need for more information. A 2003 study by the UCSF Center for the Health Professions notes that "although they comprise 15 percent of the licensed mental and behavioral health care workforce in California, little is known about psychiatric technicians, their career paths, turnover, satisfaction, practice settings, or how they decide to enter the profession." Some areas of the country clearly do not employ many psychiatric technicians and it would be interesting to understand why this is and if increasing their numbers in those regions would be beneficial for the delivery system.

HEALTHCARE SYSTEM SUPPORT

CLINICAL LAB TECHNICIAN

Clinical laboratory technicians perform general tasks in laboratory areas: they collect and prepare specimens (body fluids, tissue samples, blood samples) for analysis, analyze and record specimen data, test raw materials, and perform basic medical research relevant to laboratory analyses. "Clinical laboratory technician" is a somewhat broad occupational classification that encompasses a variety of sub-specialties including phlebotomists (analyze blood samples), histotechnicians (analyze body tissues), cytotechnicians (analyze cellular samples), and generalized medical laboratory technicians.

In 2002, there were 147,500 clinical laboratory technicians employed in the U.S. (BLS, 2002). BLS data indicate that the clinical laboratory technician profession is predominantly female (72%) and the reported average age of registered clinical laboratory workers is 43 (American Society of Clinical Pathology www.ascp.org). While the overall aggregate of laboratory workers are somewhat representative of the U.S. population with regard to racial background, ethnic and racial minorities are likely to be underrepresented among advanced, higher skilled, higher paid medical technologist groups (Grumbach et al, 2002). The median annual wage for clinical laboratory technicians in 2003 was $30,100 (BLS 2003).

More than 80% of clinical lab technicians have some college training and half have a bachelor's degree (BLS, 2002). To enter into the field, individuals must have a strong high school science background and must have earned an associate degree or certificate from a hospital, vocational school, technical school, or military training in clinical laboratory analysis. Some states require licensing and/or registration, although there are no standardized licensing requirements across states. Options for advancement are fairly straightforward and clinical lab technicians may advance to a lab *technologist* once they have acquired a bachelor's degree and at least two years of laboratory experience. Technologists can perform advanced analyses, interpret results autonomously, take on supervisory roles and have access to meaningful career advancement ladders that allow

for growth to higher-level management positions with significant opportunities for salary increases.

There is a fairly broad variation of salaries among different laboratory technician specialties; phlebotomists occupy the lower end of the salary range and cytotechnicians occupy the upper end of the salary range. While salaries have shown moderate gains over time, they are not equivalent to other health professions and many laboratory technicians feel overworked and underpaid and end up leaving to become physician assistants, for example, where they typically would be expected to work fewer hours while making more money (Koele, 2004). On average, employees in suburbs and larger cities report higher wages although the size of the hospital laboratory does not appear to have much impact on wages. However in some cases, smaller hospitals have reported slightly larger increases in wages from 2002 to 2003 than other hospital laboratories (Ward-Cook et al, 2003). Working conditions vary between large hospitals, independent laboratories, and small facilities; personnel in larger laboratories may work established day, evening, or night shifts, while those in small and rural laboratories may work rotating shifts (BLS, 2002).

According to the BLS, the demand for clinical lab technicians will continue to grow faster than average and there continues to be a shortage of qualified clinical lab technicians to fill these roles. Data indicates that this shortage has declined somewhat since 2002, however, despite declining vacancy rates, there is still a significant shortage and reported difficulty filling positions in rural areas (Minnesota Department of Public Health, 2005). There is also a reported overall vacancy rate of 7% for certified/licensed medical technicians and technologists (Ward-Cook et al, 2003). The demand for laboratory technicians will continue to grow as advances in medical technology translate to an increasing range of diagnostic tests that clinical laboratory technicians must perform (Lindler & Chapman, 2003). However, the increased closing of clinical lab training schools in the past five years has had a significant impact and has reduced the number of training programs by 30% (Jackson & Shimkus, 2004). With the rising average age of the laboratory workforce and the closing of clinical laboratory programs, the

development of younger, newly trained laboratory technicians is not keeping pace with the pace of retirement.

In response to clinical laboratory workforce shortages, there has emerged a trend of laboratories developing partnerships with existing clinical laboratory educational training programs. This "growing their own" approach provides the specific needed training and creates a pipeline of workers that reduces the need for recruiting out of the area and improves employee retention, which may prove especially useful in rural areas (UCSF Center for Health Professions, 2001). The Medical Laboratory Personnel Shortage Act (HR 623) was introduced in 2003 to address shortage issues the clinical laboratory workforce. The bill includes scholarship and loan-forgiveness programs aimed at getting students to work in designated areas experiencing personnel shortage, programs rewarding individuals teaching medical laboratory science, and also allows schools of allied health and healthcare institution-based programs to receive federal funding (Jackson & Shimkus, 2004).

Data also indicates that many in the clinical laboratory profession agree there is a general lack of understanding of the profession or what technicians do, along with a feeling of a behind-the-scenes, underappreciated profession (Koele 2004). As advances in medical technology continue, clinical lab workers will be needed to perform and increasing range of diagnostic testing.

The shortage will continue to be the greatest obstacle facing this workforce, with laboratories in rural areas being affected the most. Some analysts have suggested that the field may benefit from increased professionalization and promotion of clinical laboratory careers at the pre-college level (Lindler & Chapman, 2003). Educational training opportunities must also be made available in order to continue to build the workforce and laboratory partnerships with lab technician training programs. Increased scholarship opportunities and distance education programs may also be necessary to attract new workers. The workforce has virtually no direct contact with patients (aside from phlebotomists who occasionally draw blood) and therefore they may not be an ideal

candidate for RWJF workforce initiatives if they plan to focus on improving direct patient care unless one factors in the critical connection between what these workers do behind the scenes and the reliance on their output in making key patient care decisions by other direct care professionals (RNs, physicians, etc).

MEDICAL RECORDS and HEALTH INFORMATION TECHNICIAN

Medical records and health information technicians are a critical component of the "back office" aspect of the healthcare system. Although their direct contact with patients is very low, their function is essential to maintaining a high quality continuum of care and in effective management of any healthcare environment. Specifically, they help to ensure that accurate and timely data is compiled on all aspects of a patient's care and also are responsible for performing various analyses on aggregate data to support cost, quality and operational initiatives. They must be able to understand and work with an increasingly large array of assets including patient histories, clinical evaluations and test results, procedural output, insurance and other cost forms. To do this, they must also be able to extract needed information from other healthcare professionals and a myriad of resources on internal policies and procedures, Federal and private reimbursement, regulatory mandates and clinical terms.

Other common job titles in this classification include disability rater, health information specialist, health record technician and coding specialist (U.S. Census 2000). This role is part of the health practitioners and technicians cluster of the BLS Standard Occupational Classification (SOC) as opposed to the healthcare support cluster where the medical transcriptionists are grouped. Overall, this is a focused and well-organized occupational group with an active professional association in the American Health Information Management Association (AHIMA).

According to the BLS, there were 147,000 employed medical record and health information technicians in 2002. There is a reported history of persistent shortage in this role and high vacancy rates, estimated at 18-20% for medical coders. Educational capacity is a key issue as AHIMA estimates that 6,000 new graduates are needed annually but only 2,000 are produced. This occupational group is overwhelmingly female at 93%. It is has a White majority (69%) but also has significant African-American (13%) and Hispanic/Latino (14%) segments. Increased diversity in the role is apparently on the horizon as the ethnic profile of surveyed students in accredited

preparatory programs is reportedly shifting from White to Black (AHIMA, 2002). The median age is high at 46, a strong indication of potential retirement replacement problems (AHIMA, 2002).

The primary education level for this occupation group is the associate degree and almost 85% of employed workers age 25-44 have less than a bachelor's degree. There were over 180 accredited programs as of 2003 (American Medical Association, 2005), although as noted above, this may not be sufficient to meet the growing needs. A key barrier cited is the lack of qualified faculty, an issue common to many other healthcare educational programs. The standard curriculum involves coursework in medical terminology, anatomy and physiology, legal principles, coding and quality. There is also a large information technology component to the preparation and entrants also study database management and often statistics. Some employers will train existing hospital clerks with strong clinical backgrounds. There is no required licensure, but many employers prefer to hire registered technicians, a voluntary designation available after graduation from an accredited program and passing a national exam sponsored by AHIMA. Advancement within the role is typically through moving into supervisory and management roles or though specialization. Key examples are in Medicare coding or cancer registry. Certification increases the opportunities, and advancement alternatives may also be contingent on the size and scope of the employment environment. A bachelor's degree may be a requirement to progress in larger, more complex healthcare environments.

Due to the nature of the role, employment is spread across many different healthcare settings with a heavy concentration in hospitals (37%). Wages vary with seniority and certification. The BLS reported that the 2003 median annual wage was $24,900. The geographic variation in median wage appears to be minimal, as is wage variation across employment settings, although salaries are somewhat higher in non-healthcare settings such as the insurance industry. Short-term gains have been good with a 4.2% increase in median wages from 2002 to 2003. This role has high projected employment growth with the BLS estimating an increase in openings of almost 47% between 2002 and 2012. This demand due to growth is being driven in part by high growth in medical tests and in

complexity of medical care. It is compounded by an estimated additional need from permanent separations (mainly retirement driven) of over 20,000 workers over the same time period.

The current high vacancy rates coupled with this projected growth could lead to huge issues of both patient care quality and operational efficiency if something is not done. Some of the proposed influences on the current vacancy rates include workplace injuries due to the eyestrain and repetitive motion that comes with high computer usage. Incumbent workers must cope with increasing workloads and productivity demands in the face of shortages of qualified employees. They must also manage a constant stream of reimbursement changes and enhanced regulatory requirements including those related to the Health Information Portability and Accountability Act (HIPAA) and various state level privacy mandates.

The progressive use of new information technologies such as data warehouses and electronic medical records can be viewed as saviors or burdens. Some workers will embrace these innovations these as times savers and avenues to increasing their skill sets. Others, possibly on the older end of the spectrum, may see these as unwelcome changes and resist changing how they do their jobs. In-house training and professional development support are key to the success of any new technology implementation. Other key concerns mentioned in the literature include ensuring adequate response by the occupation in the face of bio-terrorism, the need to promote more cultural diversity and playing a critical role in the fight to reduce medical errors and enhance patient safety.

Overall, this is a well-organized occupational group that devotes a great deal of time and effort in self-reflection around educational needs and technical skill enhancement. Although they have low direct patient contact, they play an essential role in ensuring high quality service delivery and their shortages and growth outlook make them important candidates for consideration of further action. They have several key challenges that may well be served by RWJF strategic workforce initiatives as their needs around educational capacity and ongoing professional development create real areas of opportunity for

intervention by their highly centralized employment structure and their professional associations.

MEDICAL TRANSCRIPTIONIST

Medical transcriptionists (MT's) are specialists in medical language and healthcare documentation. They interpret and transcribe dictation by physicians and other healthcare professionals regarding patient assessment, workup, therapeutic procedures, clinical course, diagnosis, and prognosis.

In 2002 there were 100,800 medical transcriptionists employed in the U.S. (BLS, 2002) and the median annual wage was $27,800 in 2003 (BLS, 2003). The profession is almost exclusively female as 96% of the workforce is female (BLS, 2002) and the average age in the profession is relatively high at 49 years of age. To become an MT requires medical transcriptionist training which is offered through community colleges, vocational schools, and distance learning programs and is on average a two-year program with approximately 240 hours of externship at a healthcare facility (American Association of Medical Transcription www.aamt.org). Many medical transcriptionists work full-time in hospitals and other healthcare settings, although some may work part-time, on an "on-call" basis, or from home as independent contractors. Medical transcriptionists enter into the profession following completion of required medical transcriptionist training, although there are some opportunities for on-the-job training for individuals who have worked as medical secretaries.

Optional medical transcriptionist certification is offered through the American Association of Medical Transcription (AAMT) and while it is encouraged and understood as a verification of standard training, it is not required for employment. As of February 2004, of the 7,450 MTs registered with the AAMT, 2,840 of those were certified medical transcriptionists (CMT). Options for advancement in the field are primarily in terms of increased salaries coinciding with level of experience, and the AAMT reports that certified medical transcriptionists report higher earnings than non-certified MTs. The AAMT Certification Program has focused on making the certification process more accessible and widespread to increase certification. Currently certification is primarily obtained following an initial period of work experience as a medical transcriptionist,

however the AAMT Certification Development Team is seeking to develop a "Level 1" certification exam for entry-level transcriptionists in order to foster a workforce in which a majority of professionals in the field of medical transcription are certified.

The field of medical transcription is a highly professionalized field largely through the efforts of the American Association of Medical Transcription. The AAMT is the primary organization that deals with advocacy, education, certification, and provides networking and employment resources for MTs and its mission is to represent and advance the profession.

The medical transcriptionist field is expected to grow faster than average through 2012 (BLS, 2002) and there is already an existing shortage of qualified MTs. Speech recognition technology is becoming more prevalent in the field and may aide in the production of transcribed text, although there is still a need for editing and corrections by qualified medical transcriptionists with the relevant language skills and understanding of the medical health record. In response to the shortage of qualified medical transcriptionists, the AAMT supports the "Allied Health Professions Reinvestment Act," which seeks to establish, reauthorize, and reinvigorate allied health programs under Title VII of the Public Health Services Act (HR 215). The legislation seeks to enhance funding and training programs and student recruitment in order to meet the demands of managing healthcare data in an increasingly electronic environment. Since medical transcriptionists do not always work in large hospital settings, the AAMT is also supporting the "Small Business Health Fairness Act (HR 525) which seeks to significantly expand access to quality health care for those working in small business settings.

One of the more salient issues currently facing the field of medical transcription is the outsourcing of medical transcription overseas. In a press release in 2003, the Medical Transcription Industry Alliance (MTIA) reported that nearly 50% of the current contract transcription market demand is outsourced to a specialized vendor community and an estimated 8% - 10 % of all contract transcription from the U.S. healthcare industry is

done overseas. This would translate to 4%-5% of the total volume of transcription being performed overseas; a market in which less than 1% of registered AAMT members reside (AAMT, 2004). Other reports suggest that if this offshore transcription were to come back to the U.S., it would only further exacerbate the current domestic MT shortage. This would create an additional backlog of work and force healthcare providers to find ways to mitigate a significant financial impact (MTIA, 2003).

AAMT's position is that it understands the many reasons for outsourcing transcription work overseas. It prefers, however, to "support American MTs by advocacy efforts with the U.S. and state governments for allocation of funds for workforce and technology development in the U.S., incentives for U.S. companies to create externship programs and on-the-job training for new graduates, and the requirement of certification or licensure so that only those who are qualified are permitted to practice." (AAMT position statement www.aamt.org).

While there is not a large body of research on the medical transcription workforce, the field is largely monitored and represented through the advocacy, networking, and outreach of the AAMT. The AAMT maintains that there is a general lack of public understanding of the medical transcriptionist field and a lack of understanding of the value of quality transcription and of supporting efforts to ensure a sustainable medical transcriptionist workforce. Arguably the biggest issues that will potentially impact the workforce are the continued development of voice-recognition technology and the outsourcing of transcription work overseas. It is unclear however if these will have a positive or negative impact on the workforce and on the delivery of quality medical transcription. While the work is integral to healthcare delivery, the transcription occupation does not involve any direct patient care and thus may not be an ideal candidate for further RWJF workforce initiatives.

FINAL OBSERVATIONS

After completing all of the research and analysis that went into this definitional project on the frontline workforce, it is interesting to look back at the starting point and note that many of the pre-existing opinions and perspectives on this group are consistent with the available literature. We began this study believing that the frontline workforce receives little or no training, earns low wages, has no or minimal benefits, lacks opportunities for professional development or advancement, and has few incentives to stay in the healthcare and human services fields. While we now have more weight with which to make these statements and more nuanced analysis on how these dimensions vary by each group, in general, we have validated that the majority of these workers are in need of additional research and strategic investment.

Some of the groups studied appear to be high priority candidates for action while others may need more study or group discussion to determine their disposition. For example, RWJF may decide to exclude from further consideration pharmacy aides given their overwhelming employment outside the healthcare sector (primarily in retail). They might also choose to table activity on medical assistants given their significant employment in a setting (physician and other healthcare provider offices) that is highly decentralized and without a manageable employer entity to collaborate with.

Other occupational groups in this study including social workers, counselors and health educators appear to have the vast majority of their employment base at educational attainment levels that are higher than where the Human Capital Portfolio Team initially indicated it wanted its focus to be, primarily at the Master's level. Some portion of each of these groups is clearly not operating at those education levels but the focus in the available literature is primarily on this population and very little attention and information is being generated around paraprofessional or pre-baccalaureate workers. This may not necessarily rule out these occupations from strategic workforce investment, but it would suggest a need for more direct effort, most likely through other research methods including focus groups and surveys to try and develop more robust data.

DEFINING THE FRONTLINE WORKFORCE

APPENDIX

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APPENDIX A:

EXPLANATION OF TERMS AND STATISTICS

Explanation of Terms and Statistics	
Data Element	**Explanation & Sources**
Estimated Number	– Bureau of Labor Statistics (BLS) data from the Occupational Employment Survey: 2002 data – Data is for employed workers only; does not including the self-employed or volunteers – 2012 data is based on BLS projections and is the increase in job openings due to growth in the occupation – This figure does not include additional job openings due to permanent separation (retirement, leaving the occupation, leaving the workforce) – Rating is from the BLS and is based only on the growth projection
Demographics	– BLS data from the Current Population Survey - Table 11: 2004 Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity – Some occupational groups were not included in Table 11 or where presented in combination with other groups so data from aggregate occupational groups was used as a proxy – Average age and vacancy/turnover rate data is from various sources – NOTE: BLS does not produce statistics on union affiliation, part time workers or foreign born workers at the detailed occupational level needed to link to the frontline groups under study.
Education/ Training	– BLS Occupational Handbook 2004-2005 edition and BLS Occupational Projections and Training Data 2004-05 edition

Average Salary	– Bureau of Labor Statistics (BLS) data from the Occupational Employment Survey: 2002 & November 2003 data
	– All data are median annual wages
	– Short term gains calculated as a simple percent change between 2002 and 2003 values
	– Categorization of gains was as follows:
	  – Minimal: < 2% / year
	  – Moderate: 2 - 4.9% / year
	  – Strong: > 5% / year

Explanation of Terms and Statistics	
Data Element	**Explanation & Sources**
Regional Variation	– Wage and employed population data categorized by State and then aggregated into regions based on Department of Health and Human Services definitions – 2003 employed population from the BLS Occupational Employment Survey was divided by State level total population data from the U.S. Census to arrive at per capita figures – 2003 median annual wages were gathered by State and averaged across States within a DHHS region
Workplace Distribution	– BLS Occupational Handbook 2004-2005 edition and Bureau of Labor Statistics data from the 2003 Occupational Employment Survey – Some occupational groups were not included or where presented in combination with other groups so data from aggregate occupational groups was used as a proxy
Key Challenges, Comments & Sidebars	– Various sources and HWS synthesis

APPENDIX B:

PHASE 1 DATA TABLES

APPENDIX B: Frontline Occupational Groups by SOC Major Group

SOC Mjr Grp #	Frontline Occupational Category	Frontline Occupational Group	SOC Code
Life, Physical, and Social Science Occupations			
19	Psychologists 182 19-3030	Clinical, Counseling and School Psychologists	19-3031
19	Psychologists 182 19-3030	Psychologists, all other	19-3039
Community and Social Services Occupations			
21	Counselors 200 21-1010	Substance Abuse and Behavioral Disorder	21-1011
21	Counselors 200 21-1010	Educational, Vocational and School	21-1012
21	Counselors 200 21-1010	Marriage and Family Therapists	21-1013
21	Counselors 200 21-1010	Mental Health Counselors	21-1014
21	Counselors 200 21-1010	Rehabilitation Counselors	21-1015
21	Counselors 200 21-1010	Counselors, all other	21-1019
21	Social workers 201 21-1020	Child, Family and School Social Workers	21-1021
21	Social workers 201 21-1020	Medical and Public Health Social Workers	21-1022
21	Social workers 201 21-1020	Mental Health and Substance Abuse Social Workers	21-1023
21	Social workers 201 21-1020	Social Workers, all other	21-1029
21	Miscellaneous community and social service specialists 202 21-1090	Health Educators	21-1091
21	Miscellaneous community and social service specialists 202 21-1090	Probation Officers and Correctional Treatment Specialists	21-1092
21	Miscellaneous community and social service specialists 202 21-1090	Social and Human Service Assistants	21-1093
21	Miscellaneous community and social service specialists 202 21-1090	Community and Social Service Specialists, all other	21-1099
Education, Training, and Library Occupations			
25	Special education teachers 233 25-2040	Special Education Teachers	25-2040
Healthcare Practitioners and Technical Occupations			
29	Chiropractors 300 29-1011	Chiropractors	29-1011
29	Dentists 301 29-1020	Dentists	29-1020
29	Dietitians and nutritionists 303 29-1031	Dietitians and nutritionists	29-1031
29	Optometrists 304 29-1041	Optometrists	29-1041
29	Pharmacists 305 29-1051	Pharmacists	29-1051
29	Physicians and surgeons 306 29-1060	Physicians and surgeons	29-1060
29	Physician assistants 311 29-1071	Physician assistants	29-1071
29	Podiatrists 312 29-1081	Podiatrists	29-1081
29	Registered nurses 313 29-1111	Registered nurses	29-1111
29	Audiologists 314 29-1121	Audiologists	29-1121
29	Occupational therapists 315 29-1122	Occupational therapists	29-1122
29	Physical therapists 316 29-1123	Physical therapists	29-1123
29	Radiation therapists 320 29-1124	Radiation therapists	29-1124

APPENDIX B: Frontline Occupational Groups by SOC Major Group

SOC Mjr Grp #	Frontline Occupational Category	Frontline Occupational Group	SOC Code
29	Recreational therapists 321 29-1125	Recreational therapists	29-1125
29	Respiratory therapists 322 29-1126	Respiratory therapists	29-1126
29	Speech-language pathologists 323 29-1127	Speech-language pathologists	29-1127
29	Therapists, all other 324 29-1129	Therapists, all other	29-1129
29	Health diagnosing and treating practitioners, all other 326 29-1199	Health Diagnosing and Treating Practitioners, all other	29-1199
29	Clinical laboratory technologists and technicians 330 29-2010	Clinical laboratory technologists	29-2011
29	Clinical laboratory technologists and technicians 330 29-2010	Clinical laboratory technicians	29-2012
29	Dental hygienists 331 29-2021	Dental hygienists	29-2021
29	Diagnostic related technologists and technicians 332 29-2030	Cardiovascular Technologists and Technicians	29-2031
29	Diagnostic related technologists and technicians 332 29-2030	Diagnostic Medical Sonographers	29-2032
29	Diagnostic related technologists and technicians 332 29-2030	Nuclear Medicine Technologists	29-2033
29	Diagnostic related technologists and technicians 332 29-2030	Radiologic Technologists and Technicians	29-2034
29	Emergency medical technicians and paramedics 340 29-2041	Emergency medical technicians and paramedics	29-2041
29	Health diagnosing and treating practitioner support technicians 341 29-2050	Dietetic Technician	29-2051
29	Health diagnosing and treating practitioner support technicians 341 29-2050	Pharmacy Technician	29-2052
29	Health diagnosing and treating practitioner support technicians 341 29-2050	Psychiatric Technician	29-2053
29	Health diagnosing and treating practitioner support technicians 341 29-2050	Respiratory Therapy Technician	29-2054
29	Health diagnosing and treating practitioner support technicians 341 29-2050	Surgical Technician	29-2055
29	Licensed practical and licensed vocational nurses 350 29-2061	Licensed practical and licensed vocational nurses	29-2061
29	Medical records and health information technicians 351 29-2071	Medical records and health information technicians	29-2071
29	Opticians, dispensing 352 29-2081	Opticians, dispensing	29-2081
29	Miscellaneous health technologists and technicians 353 29-2090	Orthotists and Prosthetists	29-2091
29	Miscellaneous health technologists and technicians 353 29-2090	Health Technologists and Technicians, all other	29-2099
29	Other healthcare practitioners and technical occupations 354 29-9000	Occupational Health and Safety Specialists	29-9011
29	Other healthcare practitioners and technical occupations 354 29-9000	Occupational Health and Safety Technicians	29-9012
29	Other healthcare practitioners and technical occupations 354 29-9000	Athletic Trainers	29-9091
29	Other healthcare practitioners and technical occupations 354 29-9000	Healthcare Practitioners and Technical Workers, all other	29-9099
Healthcare Support Occupations			
31	Nursing, psychiatric, and home health aides 360 31-1010	Home Health Aides	31-1011
31	Nursing, psychiatric, and home health aides 360 31-1010	Nursing Aides, Orderlies and Attendants	31-1012
31	Nursing, psychiatric, and home health aides 360 31-1010	Psychiatric Aides	31-1013
31	Occupational therapist assistants and aides 361 31-2010	Occupational Therapist Assistants	31-2011
31	Occupational therapist assistants and aides 361 31-2010	Occupational Therapist Aides	31-2012
31	Physical therapist assistants and aides 362 31-2020	Physical Therapist Assistants	31-2021

APPENDIX B: Frontline Occupational Groups by SOC Major Group

SOC Mjr Grp #	Frontline Occupational Category	Frontline Occupational Group	SOC Code
31	Physical therapist assistants and aides 362 31-2020	Physical Therapist Aides	31-2022
31	Massage therapists 363 31-9011	Massage Therapist	31-9011
31	Miscellaneous Healthcare Support Occupations 31-9090	Dental assistants	31-9091
31	Miscellaneous Healthcare Support Occupations 31-9090	Medical assistants	31-9092
31	Miscellaneous Healthcare Support Occupations 31-9090	Medical equipment preparers	31-9093
31	Miscellaneous Healthcare Support Occupations 31-9090	Medical transcriptionists	31-9094
31	Miscellaneous Healthcare Support Occupations 31-9090	Pharmacy aides	31-9095
31	Miscellaneous Healthcare Support Occupations 31-9090	Healthcare support Workers, all other	31-9099
Protective Service Occupations			
33	Bailiffs, correctional officers, and jailers 380 33-3010	Correctional officers and jailers	33-3012
33	Lifeguards and other protective service workers 395 33-909X	Lifeguards and other protective service workers	33-9092
Personal Care and Service Occupations			
39	Transportation attendants 455 39-6030	Transportation attendants, except flight attendants	39-6032
39	Personal and home care aides 461 39-9021	Personal and home care aides	39-9021
39	Personal care and service workers, all other 465 39-9099	Personal care and service workers, all other	39-9099
Transportation and Material Moving Occupations			
53	Ambulance drivers and attendants, except EMT 911 53-3011	Ambulance drivers and attendants, except EMT	53-3011
53	Taxi drivers and chauffeurs 914 53-3041	Taxi Drivers and Chauffeurs	53-3041
53	Motor vehicle operators, all other 915 53-3099	Motor vehicle operators, all other	53-3099

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
Clinical, Counseling and School Psychologists	19-3031		
		Abnormal psychologist	182
		Assistant, school psychologist	182
		Associate school psychologist	182
		Child psychologist	182
		Clinical psychologist	182
		Counseling psychologist	182
		Educational psychologist	182
		Marriage counselor, psychologist	182
		Preliminary school psychologist	182
		Psychological examiner, school	182
		School psychologist	182
		School psychology specialist	182
		School psychometrist	182
		Vocational psychologist	182
Psychologists, all other	19-3039		
		Health psychologist	182
		Human factors scientist	182
		Measurement psychologist	182
		Mental tester	182
		Neuropsychologist	182
		Psychologist	182
		Psychometric examiner	182
		Psychometrician	182
		Psychometrist	182
		Psychotherapist	182
		Quantitative and measurement psychologist	182
		Rehabilitation psychologist	182
Substance Abuse and Behavioral Disorder Counselors	21-1011		
		Addiction counselor	200
		Alcoholic counselor	200
		Certified abuse and drug addiction counselor	200
		Certified alcohol and drug counselor	200
		Certified alcohol counselor	200
		Certified drug counselor	200
		Certified substance abuse counselor	200
		Chemical dependency counselor	200
		Drug abuse counselor	200
		Drug and alcohol tester	200
		Drug counselor	200
		Human relations counselor, drug or alcohol abuse	200
		Substance abuse counselor	200
		Technician, drug abuse	200
Educational, Vocational and School Counselors	21-1012		
Marriage and Family Therapists	21-1013		
		Counselor, family	200
		Counselor, marriage, exc. minister	200
		Family therapist	200
		Marriage counselor \ n.s.	200
		Marriage therapist	200
Mental Health Counselors	21-1014		
		Clinical mental health counselor	200
		Mental health counselor	200
Rehabilitation Counselors	21-1015		
		Coordinator of rehabilitation services	200
		Director of rehabilitation	200
		Homemaking rehabilitation consultant	200
		Psychosocial rehabilitation counselor	200
		Rehabilitation counselor	200
		Residence counselor	200

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Veterans rehabilitation counselor	200
Counselors, all other	21-1019		
		A.S.A.T. C.O.R.E. counselor	200
		AIDS counselor	200
		Counselor \ any other	200
		Girls' adviser, counselor or worker	200
		HIV counselor	200
		Mental health consultant	200
		Mental hygiene consultant	200
		Mental hygienist	200
		Race relations adviser	200
		Teenage adviser	200
Child, Family and School Social Worker	21-1021		
		Adoption agent	201
		Adoption worker	201
		Child abuse worker	201
		Child and family services worker	201
		Child consultant	201
		Child development consultant	201
		Child welfare consultant	201
		Child welfare worker	201
		Children's counselor	201
		Family preservation worker	201
		Foster care worker	201
		Juvenile officer	201
		Protective services social worker	201
		School social worker	201
Medical and Public Health Social Worker	21-1022		
		Bereavement counselor	201
		Geriatric social worker	201
		Group social worker	201
		Health care social worker	201
		Home health care social worker	201
		Hospice social worker	201
		Hospital social worker	201
		Long term care social worker	201
		Medical case worker	201
		Medical social consultant	201
		Medical social worker	201
		Neonatal social worker	201
		Nephrology social worker	201
		Nursing home social worker	201
		Older adult social work specialist	201
		Oncology social work	201
		Outreach and education social worker	201
		Pediatric social worker	201
		Perinatal social worker	201
		Public health social worker	201
		Public welfare worker	201
		Renal social worker	201
Mental Health and Substance Abuse Social Worker	21-1023		
		Alcoholism worker	201
		Clinical social worker	201
		Community mental health worker	201
		Drug abuse worker	201
		Marriage and family social worker	201
		Private practice, social worker	201
		Psychiatric social worker	201
		Psychotherapist social worker	201

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Supervisor, social work	201
Social Workers, all other	21-1029		
		Case consultant	201
		Case investigator	201
		Case reviewer	201
		Case worker	201
		Investigator \ n.s.	201
		Investigator \ n.s.	201
		Investigator, welfare	201
		Manager, case	201
		Rural health consultant	201
		Settlement worker	201
		Social insurance adviser	201
		Social insurance analyst	201
		Social worker	201
		Supervisor \ n.s.	201
		Supervisor, case	201
		Supervisor, field \ n.s.	201
		Supervisor, home	201
		Supervisor, welfare	201
		Welfare adviser	201
		Welfare analyst	201
		Welfare case worker	201
		Welfare investigator	201
		Welfare specialist	201
Health Educators	21-1091		
		Health educator	202
		Public health advisor	202
		Public health analyst	202
		Public health educator	202
		Public health instructor	202
		Public health representative	202
		Public health specialist	202
		Public health technologist	202
Probation Officers and Correctional Treatment Specialists	21-1092		
		Attendance officer	202
		Correctional treatment specialist	202
		Court worker	202
		Crime prevention worker	202
		Detention attendant	202
		Detention worker	202
		Drill instructor	202
		Parole agent	202
		Parole officer	202
		Probation and patrol agent	202
		Probation officer	202
		Probation worker	202
		Supervisor, parole	202
		Truant officer	202
Social and Human Service Assistants	21-1093		
		Aide, welfare	202
		Assistant, clinical	202
		Assistant, human services	202
		Assistant, social services	202
		Boy's adviser, counselor or worker	202
		Case aide	202
		Case work aide	202
		Children's aide	202
		Clerical aide	202

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Clinical social work aide	202
		Community aide	202
		Community coordinator	202
		Community development aide	202
		Community development worker	202
		Community health advisor	
		Community health representative	
		Community organization aide	202
		Community service worker	202
		Counseling aide	202
		Family service aide	202
		Field representative	202
		Field worker	202
		Group worker	202
		Head worker	202
		Home visitor	202
		House visitor	202
		Human services worker	202
		Lay health advocate	
		Management aide	202
		Neighborhood aide	202
		Neighborhood coordinator	202
		Neighborhood worker	202
		Outreach worker	202
		Promotores	
		Red cross worker	202
		Service aide	202
		Social contact worker	202
		Social service worker	202
		Technician, human service	202
		Travelers' aid worker	202
		Visitor	202
		Welfare service aide	202
		Welfare visitor	202
Community and Social Service Specialists, all other	21-1099		
Special Education Teachers	25-2040		
		Teacher, blind	233
		Teacher, braille	233
		Teacher, deaf	233
		Teacher, handicapped	233
		Teacher, lip reading	233
		Teacher, mentally retarded	233
		Teacher, special education	233
Chiropractors	29-1011		
Dentists	29-1020		
Dietitians and nutritionists	29-1031		
		Administrative dietitian	303
		Chief dietitian	303
		Clinical dietitian	303
		Consultant, dietitian	303
		Counselor, diet	303
		Diet consultant	303
		Diet counselor	303
		Diet therapist	303
		Dietetic intern	303
		Dietist	303
		Dietitian	303
		Food adviser	303
		Food consultant	303

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Nutrition director	303
		Nutritionist	303
		Public health dietitian	303
		Public health nutritionist	303
		Research dietitian	303
		Supervisor, diet, exc. kitchen	303
		Supervisor, food	303
		Therapeutic dietitian	303
Optometrists	29-1041		
Pharmacists	29-1051		
Physicians and surgeons	29-1060		
Physician assistants	29-1071		
		Assistant, anesthesiologist	311
		Assistant, anesthetic	311
		Assistant, doctor, other specified or n.s., associate de	311
		Assistant, gynecological	311
		Assistant, orthopedic physician	311
		Assistant, pediatric physician	311
		Assistant, physician, other specified or n.s., associate	311
		Assistant, surgeon	311
Podiatrists	29-1081		
Registered nurses	29-1111		
		Central supply nurse	313
		Circulating nurse	313
		Clinical nurse specialist	313
		Community health nurse	313
		Consulting nurse	313
		Coronary care nurse	313
		County nurse	313
		Emergency room nurse	313
		General duty nurse	313
		Geriatric nurse	313
		Graduate nurse	313
		Head nurse	313
		Industrial nurse	313
		Industrial registered nurse	313
		Industrial staff nurse	313
		Intensive care unit nurse	313
		Nurse R. N.	313
		Nurse \ other specified or n.s., AA degree or higher	313
		Nurse anesthetist	313
		Nurse clinician	313
		Nurse consultant	313
		Nurse coordinator	313
		Nurse midwife	313
		Nurse practitioner	313
		Nurse receptionist	313
		O.B. scrub nurse	313
		Obstetrical nurse	313
		Occupational health nurse	313
		Occupational nurse	313
		Office nurse \ n.s.	313
		Operating room nurse	313
		Pediatric nurse	313
		Physical therapy nurse	313
		Post anesthesia room nurse	313
		Private duty nurse \ n.s.	313
		Private duty nurse, registered	313
		Professional nurse	313

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Psychiatric nurse	313
		Public health nurse	313
		Public health staff nurse	313
		R.N.	313
		Receptionist nurse	313
		Recovery room nurse	313
		Registered health nurse	313
		Registered nurse	313
		Registered nurse midwife	313
		Registered public health nurse	313
		School nurse	313
		Scrub nurse	313
		Special duty nurse	313
		Special nurse	313
		Supervisor, delivery room	313
		Supervisor, floor \ n.s.	313
		Supervisor, health unit	313
		Supervisor, maternity floor	313
		Supervisor, nurses	313
		Supervisor, operating room	313
		Supervisor, surgical	313
		Supervisor, ward	313
		Surgical nurse	313
		Technician, nurse, associate degree or higher	313
		Undergraduate nurse	313
		Visiting nurse	313
		Ward nurse	313
		X ray nurse	313
Audiologists	29-1121		
		Audiologist	314
		Hearing therapist	314
Occupational therapists	29-1122		
		O.T.	315
		Occupational therapist	315
		Occupational therapy \ n.s., bachelor's degree or higl	315
Physical therapists	29-1123		
		Kinesiotherapist	316
		P.T. (physical therapist)	316
		Pediatric physical therapist	316
		Physical therapist	316
		Physical therapy \ n.s., bachelor's degree or higher	316
		Physiotherapist	316
		Public health physical therapist	316
		Pulmonary physical therapist	316
Radiation therapists	29-1124		
		Dosimetrist	320
		Radiation therapist	320
		Radiation therapy technologist	320
		Technician, radiation therapy	320
Recreational therapists	29-1125		
		Activity therapist	321
		Recreational therapist	321
		Therapeutic recreation specialist	321
Respiratory therapists	29-1126		
		Inhalation therapist	322
		Oxygen therapist	322
		Registered respiratory therapist	322
		Respiratory care practitioner	322
		Respiratory therapist	322

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
Speech-language pathologists	29-1127		
		Language pathologist	323
		Oral therapist	323
		Speech clinician	323
		Speech correction consultant	323
		Speech pathologist	323
		Speech therapist	323
Therapists, all other	29-1129		
		Art therapist	324
		Chemical dependency therapist	324
		Colon therapist	324
		Corrective and manual arts therapist	324
		Corrective therapist	324
		Educational therapist	324
		Health therapist, associate degree or higher	324
		Hydrotherapist	324
		Industrial therapist	324
		Manipulative therapy specialist	324
		Manual arts therapist	324
		Musical therapist	324
		Orientation therapist for the blind	324
		Peripatologist	324
		Rehabilitation program coordinator	324
		Therapist \ n.s. or other specified n.e.c.	324
Health Diagnosing and Treating Practitioners, all other	29-1199		
		Acupuncturist	326
		Electrotherapist	326
		Heliotherapist	326
		Herb doctor	326
		Herbalist	326
		Homeopathic doctor	326
		Hypnotherapist	326
		Magnetic doctor	326
		Magnetic healer	326
		Naprapath	326
		Naturopath	326
Clinical laboratory technologists	29-2011		
		Biochemistry technologist	330
		Blood bank technologist	330
		Chemistry technologist	330
		Chief medical technologist	330
		Clinical laboratory technologist	330
		Cytogenetic technologist	330
		Cytotechnologist	330
		Differential specialist	330
		Hematology technologist	330
		Histotechnologist	330
		Immunohematologists	330
		Medical laboratory technologist	330
		Medical technologist	330
		Microbiology technologist	330
		Pathology laboratory technologist	330
		Public health lab professional	330
		Supervisor, laboratory	330
		Technician, medical chief	330
		Tissue technologist	330
Clinical laboratory technicians	29-2012		
		Assistant, laboratory \ n.s.	330
		Blood typer	330

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Histologic aide	330
		Laboratory worker \ n.s.	330
		Technician \ n.s.	330
		Technician, blood or blood bank	330
		Technician, clinical laboratory	330
		Technician, cytogenetic	330
		Technician, hematology	330
		Technician, hemodialysis	330
		Technician, histologic	330
		Technician, histopathology	330
		Technician, laboratory \ n.s.	330
		Technician, medical \ n.s.	330
		Technician, medical laboratory	330
		Technician, microbiology	330
		Technician, pathological	330
		Technician, serology	330
		Technician, tissue	330
Dental hygienists	29-2021		
		Dental hygienist	331
		Oral hygienist	331
Cardiovascular Technologists and Technicians	29-2031		
		Cardiac catheterization technologist	332
		Cardiograph operator	332
		Cardiographer	332
		Cardiology technologist	332
		Cardiopulmonary technologist	332
		Cardiovascular technologist	332
		Echocardiographer	332
		Electrocardiograph operator	332
		Pulmonary function technologist	332
		Radiographer	332
		Technician, E.K.G.	332
		Technician, cardiac monitor	332
		Technician, cardiology	332
		Technician, cardiopulmonary	332
		Technician, cardiovascular	332
		Technician, electrocardigraphic	332
		Technician, holter scanning	332
Diagnostic Medical Sonographers	29-2032		
		Diagnostic medical sonographer	332
		Sonographer	332
		Technician, ultrasound	332
		Ultrasonic tester	332
		Ultrasound technologist	332
		Ultrasound tester	332
Nuclear Medicine Technologists	29-2033		
		Nuclear medical technologist	332
		Technician, isotope	332
		Technician, medical nuclear	332
		Technician, nuclear medical	332
		Technician, radioisotope	332
Radiologic Technologists and Technicians	29-2034		
		CAT scanner operator	332
		MRI (magnetic resonance imaging) technologist	332
		Radiologic technologist	332
		Skiagrapher	332
		Technician, MRI (magnetic resonance imaging)	332
		Technician, X ray	332
		Technician, radiologic	332

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Technician, radiological health	332
		X ray operator	332
Emergency medical technicians and paramedics	29-2041		
		Ambulance driver-paramedic	340
		E.M.T. (emergency medical technician)	340
		Paramedic	340
		Technician, E.M.T.	340
		Technician, emergency medical	340
		Technician, medical emergency	340
Dietetic Technician	29-2051		
		Technician, dietary	341
		Technician, dietetic	341
		Technician, food service	341
Pharmacy Technician	29-2052		
		Technician, pharmacist	341
		Technician, pharmacy	341
		Technician, pharmacy laboratory	341
Psychiatric Technician	29-2053		
		Technician, mental health	341
		Technician, psychiatric	341
Respiratory Therapy Technician	29-2054		
		Technician, oxygen equipment	341
		Technician, oxygen therapy	341
		Technician, respiratory therapy	341
Surgical Technician	29-2055		
		Surgical orderly	341
		Surgical technologist	341
		Technician, operating room	341
		Technician, scrub	341
		Technician, surgical	341
Licensed practical and licensed vocational nurses	29-2061		
		L.P. nurse	350
		L.P.N. (licensed practical nurse)	350
		L.V.N. (licensed vocational nurse)	350
		Licensed attendant	350
		Licensed practical nurse	350
		Licensed vocational nurse	350
		Maternity nurse	350
		Nurse \ other specified or n.s., high school diploma o	350
		Nurse, L.P.N.	350
		Nurse, practical	350
		Practical nurse	350
		Private duty nurse, practical	350
		T.P.N. (trained practical nurse)	350
		Trained practical nurse	350
		Vocational nurse	350
Medical records and health information technicians	29-2071		
		Assistant, medical record	351
		Disability rater	351
		Health information specialist	351
		Historian	351
		Library historian	351
		Medical care evaluation specialist	351
		Medical record clerk	351
		Medical record consultant	351
		Medical record specialist	351
		Medical records \ n.s.	351
		Severity of illness coordinator	351
		Technician, health record	351

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Technician, medical record	351
Opticians, dispensing	29-2081		
		Apprentice, optical dispenser	352
		Apprentice, optician	352
		Contact lens fitter	352
		Dispenser	352
		Dispensing optician	352
		Eyeglass fitter	352
		Licensed optical dispenser	352
		Licensed optician	352
		Ophthalmic dispenser	352
		Optical dispenser	352
		Optician	352
		Optician, dispensing and measuring	352
Orthotists and Prosthetists	29-2091		
		Artificial limb fitter	353
		Mechanic, orthopedic	353
		Orthotist	353
		Prosthetist	353
Health Technologists and Technicians, all other	29-2099		
		Audiometrist	353
		C.M.T.	353
		Child health associate	353
		Closed circuit screen watcher	353
		E.E.G. technologist	353
		Electroneurodiagnostic technologist	353
		Encephalographer	353
		Extracorporeal circulation specialist	353
		Hearing aid consultant	353
		Hearing aid fitter	353
		Hearing aid specialist	353
		Medical consultant \ n.s.	353
		Medical research, less than bachelors degree	353
		Ocular care technologist	353
		Ophthalmic technologist	353
		Optometric technologist	353
		Orthoptist	353
		Pediatric associate	353
		Perfusionist	353
		Technician, C.M.T.	353
		Technician, E.E.G.	353
		Technician, O.B.	353
		Technician, biological, health	353
		Technician, brain wave	353
		Technician, certified medical	353
		Technician, dialysis	353
		Technician, electroencephalograph	353
		Technician, environmental health	353
		Technician, extracorporeal	353
		Technician, health type \ n.s.	353
		Technician, hearing aid	353
		Technician, hospital	353
		Technician, life support	353
		Technician, medical service	353
		Technician, medtronics	353
		Technician, ocular care	353
		Technician, optometric	353
		Technician, orthoptic	353
		Technician, otometric	353

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Technician, podiatric	353
		Technician, rehabilitation	353
		Technician, supervisor, central supply	353
		Watch closed circuit screen	353
Occupational Health and Safety Specialists	29-9011		
		Adjustment examiner	354
		Chief of safety and protection	354
		Dental rating specialist	354
		Environmental health sanitarian	354
		Environmental health technologist	354
		Environmental protection officer	354
		Hazardous waste management specialist	354
		Health officer, field	354
		Health sanitarian	354
		Industrial hygienist	354
		Industrial safety-and-health specialist	354
		Inspector \ n.s.	354
		Inspector, environmental protection	354
		Inspector, health	354
		Inspector, industrial waste	354
		Inspector, occupational safety and health	354
		Inspector, quarantine	354
		Inspector, rabies	354
		Inspector, safety, analysis or research	354
		Inspector, safety, work environment	354
		Inspector, sanitarian	354
		Inspector, sanitary	354
		Inspector, sanitation	354
		Inspector, tick	354
		Inspector, water	354
		Medical safety director	354
		Occupational health and safety specialist	354
		Public health service officer	354
		Radiation protection specialist	354
		Radiological health specialist	354
		Sanitarian	354
		Sanitation officer	354
		Venereal disease investigator	354
Occupational Health and Safety Technicians	29-9012		
		Mine patrol	354
		Safety person	354
		Technician, occupational health and safety	354
Athletic Trainers	29-9091		
Healthcare Practitioners and Technical Workers, all other	29-9099		
		Drug coordinator	354
		Health service coordinator	354
Home Health Aides	31-1011		
		Home attendant	360
		Home health aide	360
		Nurse's companion	360
Nursing Aides, Orderlies and Attendants	31-1012		
		Aide \ n.s.	360
		Assistant \ n.s.	360
		Assistant, certified nursing	360
		Assistant, nurse	360
		Assistant, nursing	360
		Assistant, operating room	360
		Attendant nurse	360
		Baby nurse	360

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Birth attendant	360
		C.N.A. (certified nursing assistant)	360
		C.N.A. \ activity n.s.	360
		C.N.A., with medical or nursing	360
		Cart attendant	360
		Doula	360
		First aid attendant	360
		First aid nurse	360
		Gericare aide	360
		Health aide	360
		Health care aide	360
		Helper \ n.s.	360
		Helper, ward	360
		Hospice aide	360
		Hospice entrance attendant	360
		Hospital aide	360
		Hospital attendant	360
		Hospital corpsman	360
		Hospital orderly	360
		Infirmary attendant	360
		Institutional aide	360
		Medical aide	360
		Medical attendant	360
		Medication aide	360
		Midwife	360
		New patient escort	360
		Nurse \ other specified or n.s., less than high school	360
		Nurse sitter	360
		Nurse's aide	360
		Nursery attendant	360
		Nursing aide	360
		Operating room orderly	360
		Orderly	360
		Patient care, exc. nursing	360
		Patient escort	360
		Patient sitter	360
		Patient sitter, cleaning	360
		Patient transporter	360
		Student nurse	360
		Surgical aide	360
		Teacher, orderlies	360
		Technician, aide	360
		Technician, certified medication	360
		Technician, nurse, less than associate degree	360
		Technician, nursery	360
		Trained attendant	360
		Transporter	360
		Ward aide	360
		Ward attendant	360
Psychiatric Aides	31-1013		
		Charge aide	360
		Charge attendant	360
		Mental health aide	360
		Mental retardation aide	360
		Neuropsychiatric aide	360
		Psychiatric aide	360
		Psychiatric attendant	360
		Psychiatric orderly	360
Occupational Therapist Assistants	31-2011		

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Assistant, occupational therapy	361
		Occupational therapy \ n.s., associate degree	361
		Technician, occupational therapy	361
Occupational Therapist Aides	31-2012		
		O.T. aide	361
		Occupational therapy \ n.s., less than associate degr	361
		Occupational therapy aide	361
Physical Therapist Assistants	31-2021		
		Assistant, physical therapist/therapy	362
		Physical therapy \ n.s., associate degree	362
		Technician, physical therapy	362
Physical Therapist Aides	31-2022		
		Physical therapy \ n.s., less than associate degree	362
		Physical therapy aide	362
		Physical therapy attendant	362
		Physiotherapy aide	362
Massage Therapist	31-9011		
		Alcohol rubber	363
		Massage operator	363
		Massage therapist	363
		Masseur	363
		Masseuse	363
		Massotherapist	363
		Mechanotherapist	363
		Rubber	363
		Swedish masseuse	363
Dental assistants	31-9091		
		Aide \ n.s.	364
		Assistant, dental	364
		Assistant, dentist, exc. clerical	364
		Assistant, orthodontist	364
		Attendant \ n.s.	364
		Dental aide	364
		Dentist attendant	364
		Helper, dentist	364
Medical assistants	31-9092		
		Assistant, autopsy	365
		Assistant, chiropractic/chiropractor	365
		Assistant, clinic	365
		Assistant, doctor, other specified or n.s., less than as	365
		Assistant, hospital clinic	365
		Assistant, medical	365
		Assistant, ophthalmic	365
		Assistant, optometric	365
		Assistant, orthopedic	365
		Assistant, physician, other specified or n.s., less than	365
		Assistant, podiatric	365
		Assistant, podiatrist	365
		Helper, doctor	365
		Morgue attendant	365
		Ocular care aide	365
		Ophthalmic aide	365
		Optometric aide	365
		Orthopedic cast specialist	365
		Physician's aide	365
		Visual training aide	365
Medical equipment preparers	31-9093		
		Assistant, inhalation therapy	365
		Bandage maker	365

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Cleaner, laboratory equipment	365
		Clinical laboratory aide	365
		Diener	365
		Health equipment servicer	365
		Hot packer	365
		Inhalation therapy aide	365
		Laboratory worker, washing or cleaning laboratory ap	365
		Medical equipment preparer	365
		Oxygen equipment aide	365
		Pathology laboratory aide	365
		Respiratory therapy aide	365
		Sanitarian aide	365
		Sanitary aide	365
		Sterilization specialist	365
		Sterilizer	365
		Sterilizer machine operator	365
Medical transcriptionists	31-9094		
		Medical stenographer	365
		Medical transcriber	365
		Medical transcriptionist	365
Pharmacy aides	31-9095		
		Assistant, dispensary	365
		Assistant, pharmacist	365
		Assistant, pharmacy	365
		Dispensary attendant	365
		Drug clerk	365
		Helper, pharmacist	365
		Helper, pharmacy	365
		Pharmacist's aide	365
		Pharmacy clerk	365
		Prescription clerk	365
Healthcare support Workers, all other	31-9099		
		Assistant, blood bank	365
		Assistant, blood donor unit	365
		Assistant, dietitian	365
		Assistant, orthotic	365
		Assistant, prosthetic	365
		Assistant, public health	365
		Assistant, speech correction	365
		Assistant, speech therapy	365
		Assistant, therapy	365
		Baby formula mixer	365
		Baby formula worker	365
		Blood bank attendant	365
		Blood bank custodian	365
		Blood bank worker	365
		Blood custodian	365
		Caster	365
		Community health aide (dental, mental, school)	365
		Corrective therapy aide	365
		Dietary aide	365
		Dietitian aide	365
		Environmental health aide	365
		Health education aide	365
		Health therapist, less than associate degree	365
		Lay midwife	365
		Nutrition aide	365
		Orthotic aide	365
		Phlebotomist	365

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Prosthetic aide	365
		Public health aide	365
		Recreation therapy aide	365
		Reducing salon attendant	365
		Reducing system operator	365
		Technician, formula	365
		Technician, weight reducing	365
		Therapy aide	365
		Transfusion aide	365
		Weight reduction specialist	365
Correctional officers and jailers	33-3012		
		Convict guard	380
		Correction officer	380
		Cottage master	380
		Cottage parent	380
		Custodial officer	380
		Deputy	380
		Gang pusher	380
		Gate guard	380
		Gate watchman	380
		Guard \ n.s.	380
		Guard, correctional	380
		House father	380
		House mother	380
		House parent	380
		Jail guard	380
		Jailer	380
		Jailkeeper	380
		Matron \ n.s.	380
		Patrol conductor	380
		Penal officer	380
		Police matron	380
		Prison guard	380
		Reformatory attendant	380
		Security guard	380
		Security officer	380
		Supervisor, cottage	380
		Turnkey	380
Lifeguards and other protective service workers	33-9092		
		Beach lifeguard	395
		Life guard	395
		Ski patrol	395
Transportation attendants, except flight attendants	39-6032		
		Airport attendant, exc. cleaner	455
		Bus attendant	455
		Bus steward	455
		Car porter	455
		Chair car attendant	455
		Chair lift operator	455
		Club car attendant	455
		Conductor	455
		Dining car conductor	455
		Dining car hop	455
		Dining car steward	455
		Ground host/hostess	455
		Host/hostess, specified or n.s.	455
		Passenger attendant	455
		Passenger representative	455
		Passenger service representative	455

APPENDIX B: Frontline Occupational Groups with Job Title Detail by SOC Major Group

Frontline Occupational Group	SOC Code	Census 2000 Associated Job Titles	C2000 Code
		Purser	455
		Receptionist, airline lounge	455
		Second steward	455
		Service attendant, sleeping car	455
		Ship steward	455
		Sleeping car service attendant	455
		Station attendant \ n.s.	455
		Station usher	455
		Steward/stewardess \ n.s.	455
		Steward/stewardess, bath	455
		Steward/stewardess, railroad dining car	455
		Streetcar conductor	455
		Subway conductor	455
		Tavern car attendant	455
		Train attendant	455
		Traveling passenger agent	455
Personal and home care aides	39-9021		
		Aide \ n.s.	461
		Blind aide	461
		Blind escort	461
		Caregiver	461
		Caretaker, family member	461
		Companion	461
		Convalescent sitter	461
		Direct care staffer	461
		Geriatric aide	461
		Guardian family member	461
		Home care aide	461
		Homemaker	461
		Nutrition aide	461
		Personal attendant	461
		Sitter, exc. animal or child care	461
Personal care and service workers, all other	39-9099		
Ambulance drivers and attendants, except EMT	53-3011		
		Ambulance attendant	911
		Ambulance driver \ n.s.	911
		Patient carrier	911
Taxi Drivers and Chauffeurs	53-3041		
		Courtesy car driver	914
		Courtesy van driver	914
Motor vehicle operators, all other	53-3099		

APPENDIX B: Occupational Groups with Demographic Detail by SOC Major Group

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Counselors, all other	21-1019	N/A	N/A		Mixed		
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Physicians and surgeons	29-1060	819,000		Yes	Professional Degree	Fastest	High
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low

APPENDIX B: Occupational Groups with Demographic Detail by SOC Major Group

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Lifeguards and other protective service workers	33-9092	N/A	N/A				
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Motor vehicle operators, all other	53-3099	N/A	N/A				

APPENDIX B: Occupational Groups with Demographic Detail by Education Level and Independent Practice

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Physicians and surgeons	29-1060	819,000		Yes	Professional Degree	Fastest	High
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med

APPENDIX B: Occupational Groups with Demographic Detail by Education Level and Independent Practice

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
"All Other" Occ Groups -Data TBD							
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Counselors, all other	21-1019	N/A	N/A		Mixed		
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Low Direct Care							
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Lifeguards and other protective service workers	33-9092	N/A	N/A				
Motor vehicle operators, all other	53-3099	N/A	N/A				

APPENDIX B: Occupational Groups with Demographic Detail by November 2003 Median Annual Wage

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Physicians and surgeons	29-1060	819,000	$150,000+	Yes	Professional Degree	Fastest	High
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low

APPENDIX B: Occupational Groups with Demographic Detail by November 2003 Median Annual Wage

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
"All Other" Occ Groups -Data TBD							
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Counselors, all other	21-1019	N/A	N/A		Mixed		
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Low Direct Care							
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low

APPENDIX B: Occupational Groups with Demographic Detail by Licensure Requirement

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Physicians and surgeons	29-1060	819,000	$150,000+	Yes	Professional Degree	Fastest	High
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	Regist.	Post 2nd Voc	Above Avg	Low
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low

APPENDIX B: Occupational Groups with Demographic Detail by Licensure Requirement

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
"All Other" Occ Groups -Data TBD							
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Counselors, all other	21-1019	N/A	N/A		Mixed		
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Low Direct Care							
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med

APPENDIX B: Occupational Groups with Demographic Detail by November 2003 Employment (ex. self employed)

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low

APPENDIX B: Occupational Groups with Demographic Detail by November 2003 Employment (ex. self employed)

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Physicians and surgeons	29-1060	819,000		Yes	Professional Degree	Fastest	High
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
"All Other" Occ Groups -Data TBD							
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Counselors, all other	21-1019	N/A	N/A		Mixed		
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Low Direct Care							
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Lifeguards and other protective service workers	33-9092	N/A	N/A				
Motor vehicle operators, all other	53-3099	N/A	N/A				

APPENDIX B: Occupational Groups with Demographic Detail by Job Outlook

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Physicians and surgeons	29-1060	819,000	$150,000+	Yes	Professional Degree	Fastest	High
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High

APPENDIX B: Occupational Groups with Demographic Detail by Job Outlook

Frontline Occupational Group	SOC Code	BLS Occupational Statistics					
		Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
"All Other" Occ Groups -Data TBD							
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Counselors, all other	21-1019	N/A	N/A		Mixed		
Social Workers, all other	21-1029	N/A	N/A		Mixed		
Community and Social Service Specialists, all other	21-1099	N/A	N/A		Mixed		
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A		Mixed		
Healthcare support Workers, all other	31-9099	N/A	N/A		Mixed		
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Low Direct Care							
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	Med
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High

APPENDIX B: Advancing vs Excluded Frontline Occupational Groups

		BLS Occupational Statistics					
Frontline Occupational Group	SOC Code	Nov. 2003 Employment	Med. Ann Wage	License Required	Signif. Education Level	Job Outlook	Indep Practice
Working List of Groups to Advance							
Substance Abuse and Behavioral Disorder Counselors	21-1011	64,900	$31,510	Yes	Master's	Above Avg	Med
Mental Health Counselors	21-1014	86,650	$32,040	Yes	Most States: Master's, if Lic	Above Avg	High
Counselors, all other	21-1019	N/A	N/A	N/A	Mixed	N/A	N/A
Child, Family and School Social Worker	21-1021	252,870	$34,300	Yes	Bachelor's/Master's	Above Avg	High
Medical and Public Health Social Worker	21-1022	103,040	$39,160	Yes	Master's	Above Avg	High
Mental Health and Substance Abuse Social Worker	21-1023	102,110	$33,650	Yes	Master's	Fastest	High
Social Workers, all other	21-1029	N/A	N/A	N/A	Mixed	N/A	N/A
Health Educators	21-1091	45,520	$38,100	No	Master's	Above Avg	N/A
Social and Human Service Assistants	21-1093	326,050	$23,990	No	OTJ	Fastest	Low
Community and Social Service Specialists, all other	21-1099	N/A	N/A	N/A	Mixed	N/A	N/A
Clinical laboratory technicians	29-2012	142,700	$30,140	Varies-St	Associate Degree	Above Avg	Low
Emergency medical technicians and paramedics	29-2041	186,110	$24,760	Cert/Regis	Post 2nd Voc	Fastest	Low
Psychiatric Technician	29-2053	59,200	$25,670	Varies-St	OTJ	Below Avg	Low
Medical records and health information technicians	29-2071	152,220	$24,920	Regis.	Associate Degree	Above Avg	Low
Occupational Health and Safety Specialists	29-9011	44,700	$48,330	Cert.	Bachelor's	Average	Low
Healthcare Practitioners and Technical Workers, all other	29-9099	N/A	N/A	N/A	Mixed	N/A	N/A
Home Health Aides	31-1011	576,560	$18,890	Comp. Test	OTJ	Fastest	Med
Nursing Aides, Orderlies and Attendants	31-1012	1,363,310	$21,370	Some Cert.	OTJ	Above Avg	Low
Psychiatric Aides	31-1013	53,550	$24,140	No	OTJ	Average	Low
Physical Therapist Aides	31-2022	37,480	$22,390	No	OTJ	Fastest	Low
Medical assistants	31-9092	376,300	$25,130	No	OTJ	Fastest	Low
Medical transcriptionists	31-9094	96,340	$28,530	No	Post 2nd Voc	Above Avg	High
Pharmacy aides	31-9095	61,150	$19,770	No	OTJ	Average	Low
Healthcare support Workers, all other	31-9099	N/A	N/A	N/A	Mixed	N/A	N/A
Personal and home care aides	39-9021	507,410	$16,750	No	OTJ	Fastest	Med
List of Groups the Team Excluded							
Clinical, Counseling and School Psychologists	19-3031	98,000	$53,230	Yes	Doctoral	Fastest	High
Psychologists, all other	19-3039	N/A	N/A		Mixed		
Educational, Vocational and School	21-1012	217,570	$44,990	Cert.	Master's	Average	Med
Marriage and Family Therapists	21-1013	20,850	$38,210	Yes	Most States: Master's, if Lic	Above Avg	High
Rehabilitation Counselors	21-1015	117,670	$27,410	Yes	Most States: Master's, if Lic	Above Avg	High
Probation Officers and Correctional Treatment Specialists	21-1092	84,000	$38,360	No	Bachelor's	Average	Low
Special Education Teachers	25-2040	431,810	$45,000	Yes	Bachelor's/Master's	Above Avg	Low
Chiropractors	29-1011	20,660	$66,610	Yes	Professional Degree	Fastest	High
Dentists	29-1020	98,800	$120,420	Yes	Professional Degree	Below Avg	High
Dietitians and nutritionists	29-1031	46,630	$42,630	Varies	Bachelor's	Average	Med
Optometrists	29-1041	22,760	$87,340	Yes	Professional Degree	Fastest	High
Pharmacists	29-1051	219,790	$82,520	Yes	Professional Degree	Fastest	High
Physicians and surgeons	29-1060	819,000		Yes	Professional Degree	Fastest	High
Physician assistants	29-1071	61,850	$68,200	Cert.	Bachelor's	Fastest	Low

APPENDIX B: Advancing vs Excluded Frontline Occupational Groups

		BLS Occupational Statistics					
Frontline Occupational Group	**SOC Code**	**Nov. 2003 Employment**	**Med. Ann Wage**	**License Required**	**Signif. Education Level**	**Job Outlook**	**Indep Practice**
Podiatrists	29-1081	7,650	$95,550	Yes	Professional Degree	Average	High
Registered nurses	29-1111	2,280,170	$51,020	Yes	Associate Degree	Above Avg	Low
Audiologists	29-1121	10,480	$50,000	Yes	Professional Degree	Above Avg	Med
Occupational therapists	29-1122	83,220	$53,320	Yes	Bachelor's (Master's in 2007)	Above Avg	Med
Physical therapists	29-1123	137,370	$58,700	Yes	Master's	Fastest	Med
Radiation therapists	29-1124	14,030	$55,550	Yes/Cert	Associate Degree	Above Avg	Low
Recreational therapists	29-1125	22,460	$32,540	Cert pref	Associate/Bachelor's	Below Avg	Med
Respiratory therapists	29-1126	89,300	$42,050	Varies	Associate Degree	Above Avg	Low
Speech-language pathologists	29-1127	89,370	$50,890	Varies	Master's	Above Avg	Med
Therapists, all other	29-1129	N/A	N/A		Mixed		
Health Diagnosing and Treating Practitioners, all other	29-1199	N/A	N/A		Mixed		
Clinical laboratory technologists	29-2011	148,710	$44,460	Varies-St	Bachelor's	Above Avg	Low
Dental hygienists	29-2021	145,170	$56,680	Yes	Associate Degree	Fastest	Low
Cardiovascular Technologists and Technicians	29-2031	43,150	$37,800	No	Post 2nd Voc	Above Avg	Low
Diagnostic Medical Sonographers	29-2032	40,210	$50,980	No/Regis.	Post 2nd Voc	Above Avg	Low
Nuclear Medicine Technologists	29-2033	17,400	$53,680	Varies-St	Associate/Post 2nd Voc	Above Avg	Low
Radiologic Technologists and Technicians	29-2034	175,800	$41,850	Varies-St	Post 2nd Voc	Above Avg	Low
Dietetic Technician	29-2051	25,690	$22,870	Regist.	Associate Degree	Average	Low
Pharmacy Technician	29-2052	226,200	$23,430	No	OTJ	Above Avg	Low
Respiratory Therapy Technician	29-2054	25,530	$35,960	Varies	Post 2nd Voc	Fastest	Low
Surgical Technician	29-2055	77,980	$33,150	No	Post 2nd Voc	Above Avg	Low
Licensed practical and licensed vocational nurses	29-2061	691,110	$33,110	Yes	Post 2nd Voc	Average	Low
Opticians, dispensing	29-2081	61,990	$27,360	Varies-St	OTJ	Average	Low
Orthotists and Prosthetists	29-2091	4,930	$49,860	Varies-St	Bachelor's	Average	Low
Occupational Health and Safety Technicians	29-9012	inc in 29-9011	inc in 29-9011	Cert.	Bachelor's	Average	Low
Athletic Trainers	29-9091	12,860	$24,920	No	Bachelor's	Above Avg	High
Health Technologists and Technicians, all other	29-2099	N/A	N/A		Mixed		
Occupational Therapist Assistants	31-2011	19,990	$38,130	Yes	Associate Degree	Above Avg	Low
Occupational Therapist Aides	31-2012	5,830	$25,970	No	OTJ	Fastest	Low
Physical Therapist Assistants	31-2021	54,240	$37,270	Varies-St	Associate Degree	Above Avg	Low
Massage Therapist	31-9011	29,550	$35,000	No	Post 2nd Voc	Above Avg	High
Dental assistants	31-9091	271,200	$28,550	Varies-St	OTJ	Fastest	Low
Medical equipment preparers	31-9093	39,330	$24,800	No	Associate/Post 2nd Voc	Average	Low
Correctional officers and jailers	33-3012	412,030	$33,240	No	Post 2nd Voc/OTJ	Above Avg	Low
Lifeguards and other protective service workers	33-9092	N/A	N/A				
Transportation attendants, except flight attendants	39-6032	28,440	$18,900	No	OTJ	Average	Low
Personal care and service workers, all other	39-9099	N/A	N/A		Mixed		
Ambulance drivers and attendants, except EMT	53-3011	18,420	$18,920	Some Cert.	OTJ	Above Avg	Low
Taxi Drivers and Chauffeurs	53-3041	131,880	$19,230	Yes	OTJ	Above Avg	High
Motor vehicle operators, all other	53-3099	N/A	N/A				

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
21-1011	Substance Abuse and Behavioral Disorder Counselors	Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs. Exclude "Social Workers" (21-1021 through 21-1029), "Psychologists" (19-3031 through 19-3039), and "Mental Health Counselors" (21-1014) providing these services.		
			Addiction counselor	200
			Alcoholic counselor	200
			Certified abuse and drug addiction counselor	200
			Certified alcohol and drug counselor	200
			Certified alcohol counselor	200
			Certified drug counselor	200
			Certified substance abuse counselor	200
			Chemical dependency counselor	200
			Drug abuse counselor	200
			Drug and alcohol tester	200
			Drug counselor	200
			Human relations counselor, drug or alcohol abuse	200
			Substance abuse counselor	200
			Technician, drug abuse	200
21-1014	Mental Health Counselors	Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental health. May help individuals deal with addictions and substance abuse; family, parenting, and marital problems; suicide; stress management; problems with self-esteem; and issues associated with aging and mental and emotional health. Exclude "Social Workers" (21-1021 through 21-1029), "Psychiatrists" (29-1066), and "Psychologists" (19-3031 through 19-3039).		
			Clinical mental health counselor	200
			Mental health counselor	200
21-1019	Counselors, all other	All counselors not listed separately.		
			A.S.A.T. C.O.R.E. counselor	200
			AIDS counselor	200
			Counselor \ any other	200

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Girls' adviser, counselor or worker	200
			HIV counselor	200
			Mental health consultant	200
			Mental hygiene consultant	200
			Mental hygienist	200
			Race relations adviser	200
			Teenage adviser	200
21-1021	Child, Family and School Social Workers	Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist single parents, arrange adoptions, and find foster homes for abandoned or abused children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers on how to deal with problem children.		
			Adoption agent	201
			Adoption worker	201
			Child abuse worker	201
			Child and family services worker	201
			Child consultant	201
			Child development consultant	201
			Child welfare consultant	201
			Child welfare worker	201
			Children's counselor	201
			Family preservation worker	201
			Foster care worker	201
			Juvenile officer	201
			Protective services social worker	201
			School social worker	201

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
21-1022	Medical and Public Health Social Worker	Provide persons, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses, such as Alzheimer's, cancer, or AIDS. Services include advising family care givers, providing patient education and counseling, and making necessary referrals for other social services.		
			Bereavement counselor	201
			Geriatric social worker	201
			Group social worker	201
			Health care social worker	201
			Home health care social worker	201
			Hospice social worker	201
			Hospital social worker	201
			Long term care social worker	201
			Medical case worker	201
			Medical social consultant	201
			Medical social worker	201
			Neonatal social worker	201
			Nephrology social worker	201
			Nursing home social worker	201
			Older adult social work specialist	201
			Oncology social work	201
			Outreach and education social worker	201
			Pediatric social worker	201
			Perinatal social worker	201
			Public health social worker	201
			Public welfare worker	201
			Renal social worker	201
21-1023	Mental Health and Substance Abuse Social Worker	Assess and treat individuals with mental, emotional, or substance abuse problems, including abuse of alcohol, tobacco, and/or other drugs. Activities may include individual and group therapy, crisis intervention, case management, client advocacy, prevention, and education.		
			Alcoholism worker	201
			Clinical social worker	201

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Community mental health worker	201
			Drug abuse worker	201
			Marriage and family social worker	201
			Private practice, social worker	201
			Psychiatric social worker	201
			Psychotherapist social worker	201
			Supervisor, social work	201
21-1029	Social Workers, all other	All social workers not listed separately.		
			Case consultant	201
			Case investigator	201
			Case reviewer	201
			Case worker	201
			Investigator \ n.s.	201
			Investigator \ n.s.	201
			Investigator, welfare	201
			Manager, case	201
			Rural health consultant	201
			Settlement worker	201
			Social insurance adviser	201
			Social insurance analyst	201
			Social worker	201
			Supervisor \ n.s.	201
			Supervisor, case	201
			Supervisor, field \ n.s.	201
			Supervisor, home	201
			Supervisor, welfare	201
			Welfare adviser	201
			Welfare analyst	201
			Welfare case worker	201
			Welfare investigator	201
			Welfare specialist	201

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
21-1091	Health Educators	Promote, maintain, and improve individual and community health by assisting individuals and communities to adopt healthy behaviors. Collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies and environments. May also serve as a resource to assist individuals, other professionals, or the community, and may administer fiscal resources for health education programs.		
			Health educator	202
			Public health advisor	202
			Public health analyst	202
			Public health educator	202
			Public health instructor	202
			Public health representative	202
			Public health specialist	202
			Public health technologist	202
21-1093	Social & Human Service Assistants	Assist professionals from a wide variety of fields, such as psychology, rehabilitation, or social work, to provide client services, as well as support for families. May assist clients in identifying available benefits and social and community services and help clients obtain them. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or adult daycare. Exclude "Rehabilitation Counselors" (21-1015), "Personal and Home Care Aides" (39-9021), "Eligibility Interviewers, Government Programs" (43-4061), and "Psychiatric Technicians" (29-2053).		
			Aide, welfare	202
			Assistant, clinical	202
			Assistant, human services	202
			Assistant, social services	202
			Boy's adviser, counselor or worker	202

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Case aide	202
			Case work aide	202
			Children's aide	202
			Clerical aide	202
			Clinical social work aide	202
			Community aide	202
			Community coordinator	202
			Community development aide	202
			Community development worker	202
			Community health advisor	
			Community health representative	
			Community organization aide	202
			Community service worker	202
			Counseling aide	202
			Family service aide	202
			Field representative	202
			Field worker	202
			Group worker	202
			Head worker	202
			Home visitor	202
			House visitor	202
			Human services worker	202
			Lay health advocate	
			Management aide	202
			Neighborhood aide	202
			Neighborhood coordinator	202
			Neighborhood worker	202
			Outreach worker	202
			Promotores	
			Red cross worker	202
			Service aide	202
			Social contact worker	202
			Social service worker	202
			Technician, human service	202
			Travelers' aid worker	202
			Visitor	202
			Welfare service aide	202
			Welfare visitor	202

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
21-1099	Community and Social Service Specialists, all other (limited set)	All community and social service specialists not listed separately.		
			Community center worker	202
			Community organization worker	202
			Community organizer	202
			Field worker	202
29-2012	Clinical laboratory technicians	Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.		
			Assistant, laboratory \ n.s.	330
			Blood typer	330
			Histologic aide	330
			Laboratory worker \ n.s.	330
			Technician \ n.s.	330
			Technician, blood or blood bank	330
			Technician, clinical laboratory	330
			Technician, cytogenetic	330
			Technician, hematology	330
			Technician, hemodialysis	330
			Technician, histologic	330
			Technician, histopathology	330
			Technician, laboratory \ n.s.	330
			Technician, medical \ n.s.	330
			Technician, medical laboratory	330
			Technician, microbiology	330
			Technician, pathological	330
			Technician, serology	330
			Technician, tissue	330
29-2041	EMT & Paramedics	Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.		
			Ambulance driver-paramedic	340
			E.M.T. (emergency medical technician)	340
			Paramedic	340
			Technician, E.M.T.	340

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Technician, emergency medical	340
			Technician, medical emergency	340
29-2053	Psychiatric Technicians	Care for mentally impaired or emotionally disturbed individuals, following physician instructions and hospital procedures. Monitor patients' physical and emotional well-being and report to medical staff. May participate in rehabilitation and treatment programs, help with personal hygiene, and administer oral medications and hypodermic injections.		
			Technician, mental health	341
			Technician, psychiatric	341
29-2071	Medical Records and Health Information Technicians	Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information for health requirements and standards.		
			Assistant, medical record	351
			Disability rater	351
			Health information specialist	351
			Historian	351
			Library historian	351
			Medical care evaluation specialist	351
			Medical record clerk	351
			Medical record consultant	351
			Medical record specialist	351
			Medical records \ n.s.	351
			Severity of illness coordinator	351
			Technician, health record	351
			Technician, medical record	351

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
29-9011	Occupational Health & Safety Specialists	Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals. May be employed in the public or private sector. Include environmental protection officers.	Adjustment examiner	354
			Chief of safety and protection	354
			Dental rating specialist	354
			Environmental health sanitarian	354
			Environmental health technologist	354
			Environmental protection officer	354
			Hazardous waste management specialist	354
			Health officer, field	354
			Health sanitarian	354
			Industrial hygienist	354
			Industrial safety-and-health specialist	354
			Inspector \ n.s.	354
			Inspector, environmental protection	354
			Inspector, health	354
			Inspector, industrial waste	354
			Inspector, occupational safety and health	354
			Inspector, quarantine	354
			Inspector, rabies	354
			Inspector, safety, analysis or research	354
			Inspector, safety, work environment	354
			Inspector, sanitarian	354
			Inspector, sanitary	354
			Inspector, sanitation	354
			Inspector, tick	354
			Inspector, water	354
			Medical safety director	354
			Occupational health and safety specialist	354
			Public health service officer	354
			Radiation protection specialist	354
			Radiological health specialist	354

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Sanitarian	354
			Sanitation officer	354
			Venereal disease investigator	354
29-9099	Healthcare Practitioners and Technical Workers, all other	All healthcare practitioners and technical workers not listed separately.		
			Drug coordinator	354
			Health service coordinator	354
31-1011	Home Health Aides	Provide routine, personal healthcare, such as bathing, dressing, or grooming, to elderly, convalescent, or disabled persons in the home of patients or in a residential care facility.		
			Home attendant	360
			Home health aide	360
			Nurse's companion	360
31-1012	Nursing Aides, Orderlies, and Attendants	Provide basic patient care under direction of nursing staff. Perform duties, such as feed, bathe, dress, groom, or move patients, or change linens. Exclude "Home Health Aides" (31-1011) and "Psychiatric Aides" (31-1013)		
			Aide \ n.s.	360
			Assistant \ n.s.	360
			Assistant, certified nursing	360
			Assistant, nurse	360
			Assistant, nursing	360
			Assistant, operating room	360
			Attendant nurse	360
			Baby nurse	360
			Birth attendant	360
			C.N.A. (certified nursing assistant)	360
			C.N.A. \ activity n.s.	360
			C.N.A., with medical or nursing	360
			Cart attendant	360
			Doula	360
			First aid attendant	360
			First aid nurse	360
			Gericare aide	360

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Health aide	360
			Health care aide	360
			Helper \ n.s.	360
			Helper, ward	360
			Hospice aide	360
			Hospice entrance attendant	360
			Hospital aide	360
			Hospital attendant	360
			Hospital corpsman	360
			Hospital orderly	360
			Infirmary attendant	360
			Institutional aide	360
			Medical aide	360
			Medical attendant	360
			Medication aide	360
			Midwife	360
			New patient escort	360
			Nurse \ other specified or n.s., less than high scho	360
			Nurse sitter	360
			Nurse's aide	360
			Nursery attendant	360
			Nursing aide	360
			Operating room orderly	360
			Orderly	360
			Patient care, exc. nursing	360
			Patient escort	360
			Patient sitter	360
			Patient sitter, cleaning	360
			Patient transporter	360
			Student nurse	360
			Surgical aide	360
			Teacher, orderlies	360
			Technician, aide	360
			Technician, certified medication	360
			Technician, nurse, less than associate degree	360
			Technician, nursery	360
			Trained attendant	360
			Transporter	360

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Ward aide	360
			Ward attendant	360
31-1013	Psychiatric Aides	Assist mentally impaired or emotionally disturbed patients, working under direction of nursing and medical staff.		
			Charge aide	360
			Charge attendant	360
			Mental health aide	360
			Mental retardation aide	360
			Neuropsychiatric aide	360
			Psychiatric aide	360
			Psychiatric attendant	360
			Psychiatric orderly	360
31-2022	Physical Therapist Aides	Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.		
			Physical therapy \ n.s., less than associate degree	362
			Physical therapy aide	362
			Physical therapy attendant	362
			Physiotherapy aide	362
31-9092	Medical Assistants	Perform administrative and certain clinical duties under the direction of physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician. Exclude "Physician Assistants" (29-1071).		
			Assistant, autopsy	365
			Assistant, chiropractic/chiropractor	365
			Assistant, clinic	365
			Assistant, doctor, other specified or n.s., less than	365
			Assistant, hospital clinic	365

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Assistant, medical	365
			Assistant, ophthalmic	365
			Assistant, optometric	365
			Assistant, orthopedic	365
			Assistant, physician, other specified or n.s., less th	365
			Assistant, podiatric	365
			Assistant, podiatrist	365
			Helper, doctor	365
			Morgue attendant	365
			Ocular care aide	365
			Ophthalmic aide	365
			Optometric aide	365
			Orthopedic cast specialist	365
			Physician's aide	365
			Visual training aide	365
31-9094	Medical Transcriptionists	Use transcribing machines with headset and foot pedal to listen to recordings by physicians and other healthcare professionals dictating a variety of medical reports, such as emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcribe dictated reports and translate medical jargon and abbreviations into their expanded forms. Edit as necessary and return reports in either printed or electronic form to the dictator for review and signature, or correction.		
			Medical stenographer	365
			Medical transcriber	365
			Medical transcriptionist	365
31-9095	Pharmacy Aides	Record drugs delivered to the pharmacy, store incoming merchandise, and inform the supervisor of stock needs. May operate cash register and accept prescriptions for filling.		
			Assistant, dispensary	365
			Assistant, pharmacist	365
			Assistant, pharmacy	365
			Dispensary attendant	365

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Drug clerk	365
			Helper, pharmacist	365
			Helper, pharmacy	365
			Pharmacist's aide	365
			Pharmacy clerk	365
			Prescription clerk	365
31-9099	Healthcare Support Workers, all other	All healthcare support workers not listed separately.		
			Assistant, blood bank	365
			Assistant, blood donor unit	365
			Assistant, dietitian	365
			Assistant, orthotic	365
			Assistant, prosthetic	365
			Assistant, public health	365
			Assistant, speech correction	365
			Assistant, speech therapy	365
			Assistant, therapy	365
			Baby formula mixer	365
			Baby formula worker	365
			Blood bank attendant	365
			Blood bank custodian	365
			Blood bank worker	365
			Blood custodian	365
			Caster	365
			Community health aide (dental, mental, school)	365
			Corrective therapy aide	365
			Dietary aide	365
			Dietitian aide	365
			Environmental health aide	365
			Health education aide	365
			Health therapist, less than associate degree	365
			Lay midwife	365
			Nutrition aide	365
			Orthotic aide	365
			Phlebotomist	365
			Prosthetic aide	365
			Public health aide	365

APPENDIX B: Frontline Occupational Groups Selected for Advancement with Detail

SOC Code	Occupational Role	BLS Description	Census 2000 Job Titles	Census Code
			Recreation therapy aide	365
			Reducing salon attendant	365
			Reducing system operator	365
			Technician, formula	365
			Technician, weight reducing	365
			Therapy aide	365
			Transfusion aide	365
			Weight reduction specialist	365
39-9021	Personal & Home Care Aides	Assist elderly or disabled adults with daily living activities at the person's home or in a daytime non-residential facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide meals and supervised activities at non-residential care facilities. May advise families, the elderly, and disabled on such things as nutrition, cleanliness, and household utilities.		
			Aide \ n.s.	461
			Blind aide	461
			Blind escort	461
			Caregiver	461
			Caretaker, family member	461
			Companion	461
			Convalescent sitter	461
			Direct care staffer	461
			Geriatric aide	461
			Guardian family member	461
			Home care aide	461
			Homemaker	461
			Nutrition aide	461
			Personal attendant	461
			Sitter, exc. animal or child care	461

APPENDIX C:

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